

Figure 1

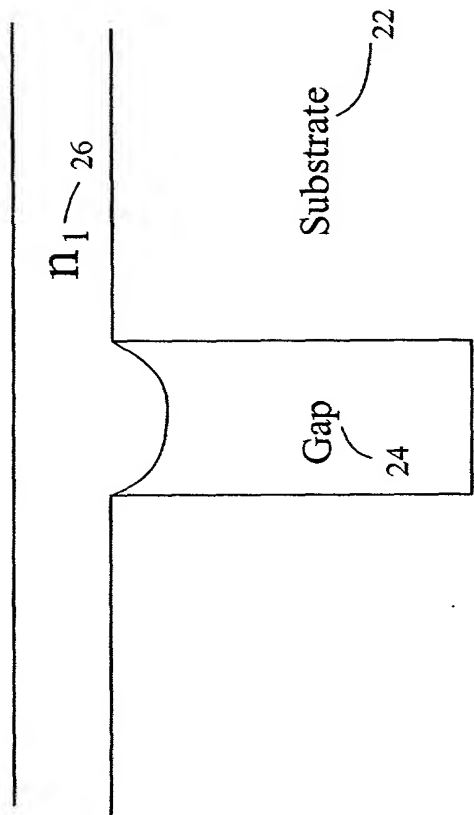


Figure 2

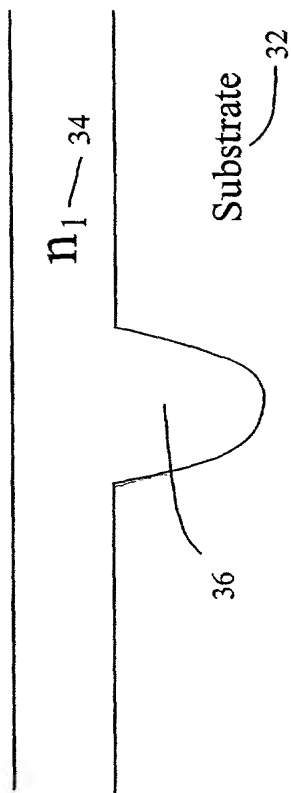


Figure 3

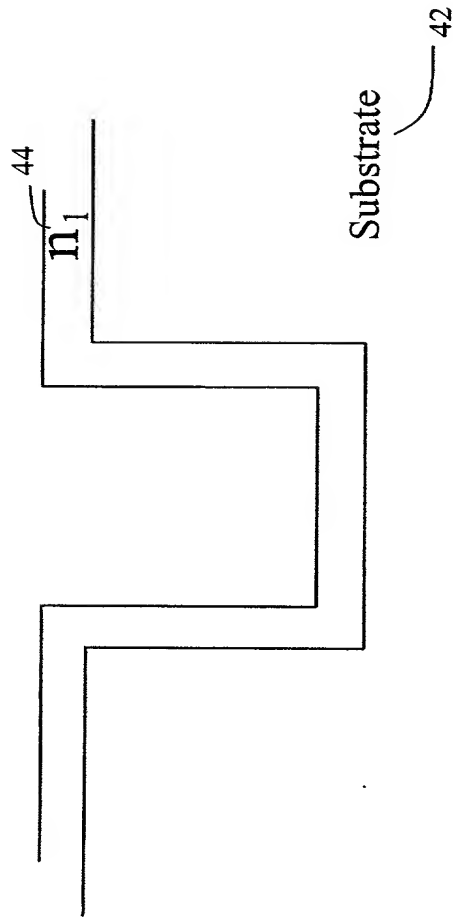
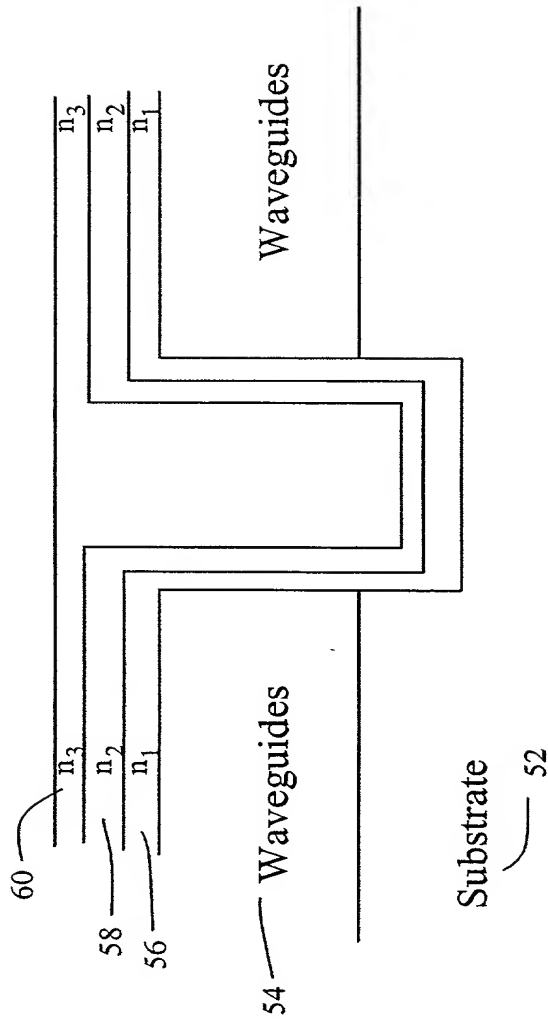


Figure 4

50

Thin film filter



Guided wave thin film filters

Figure 5A

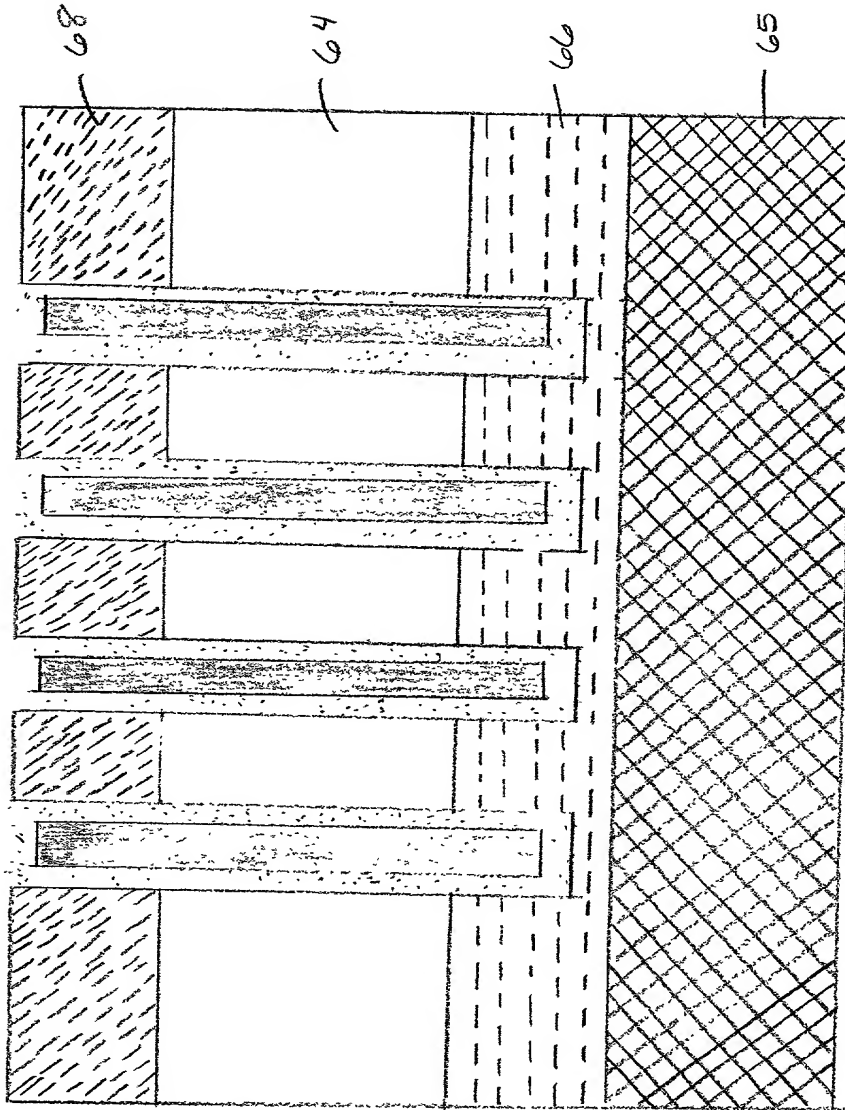


Figure 5B

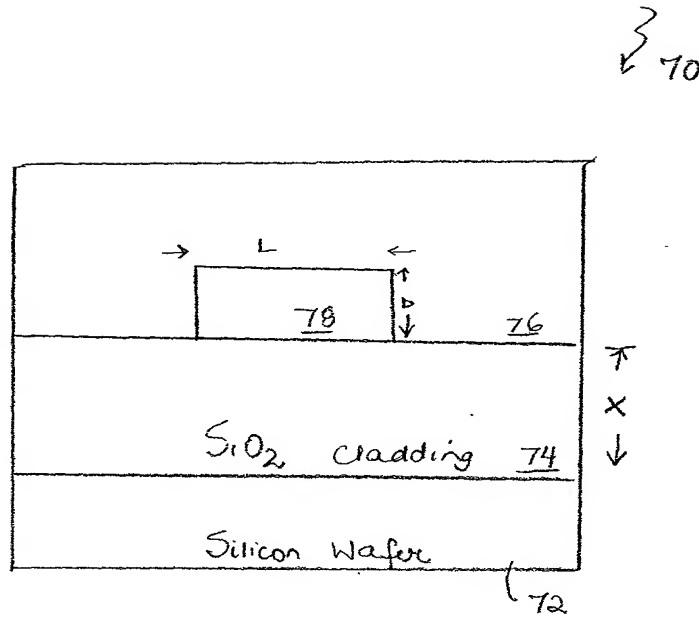


Figure 5C

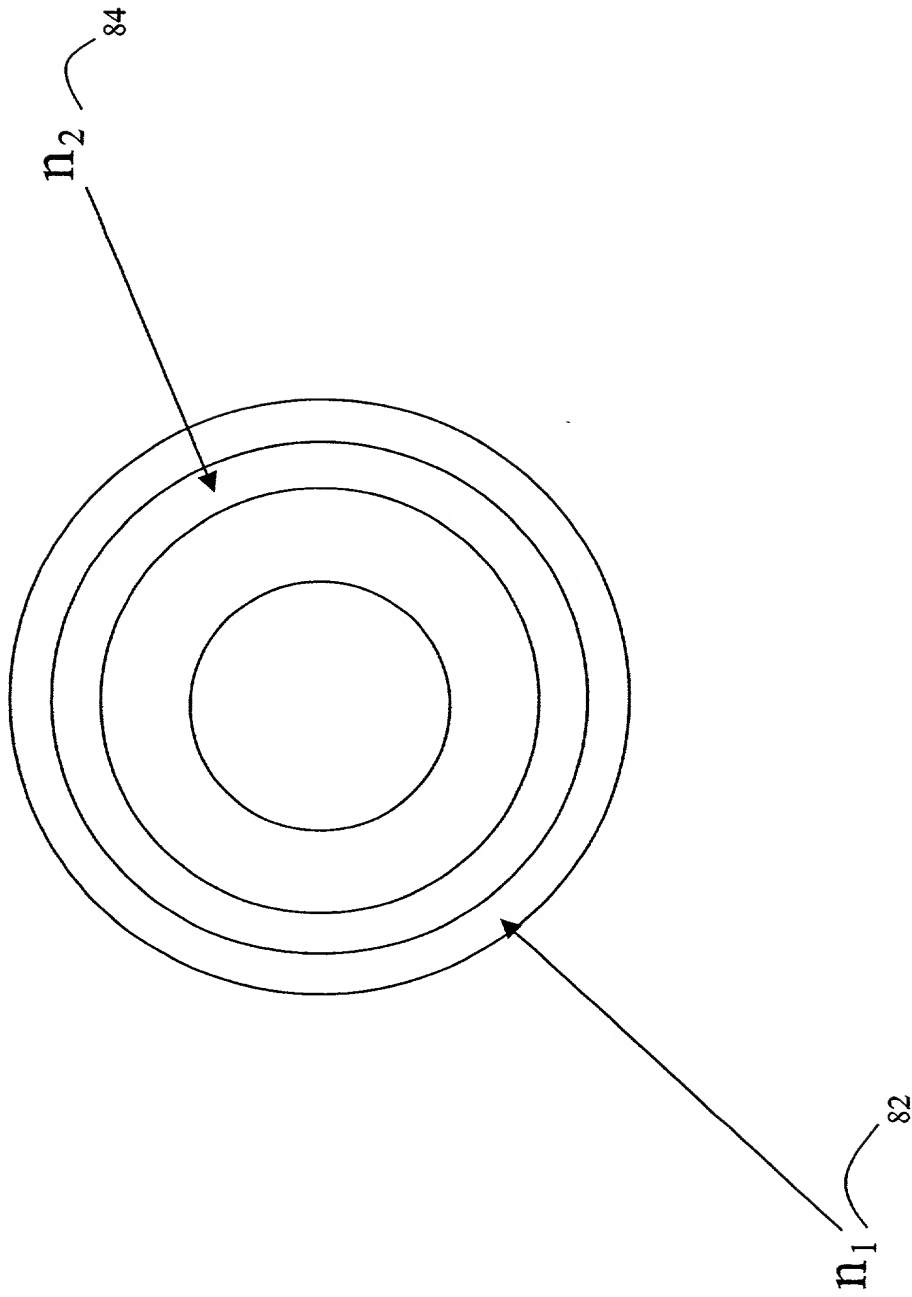


Figure 6



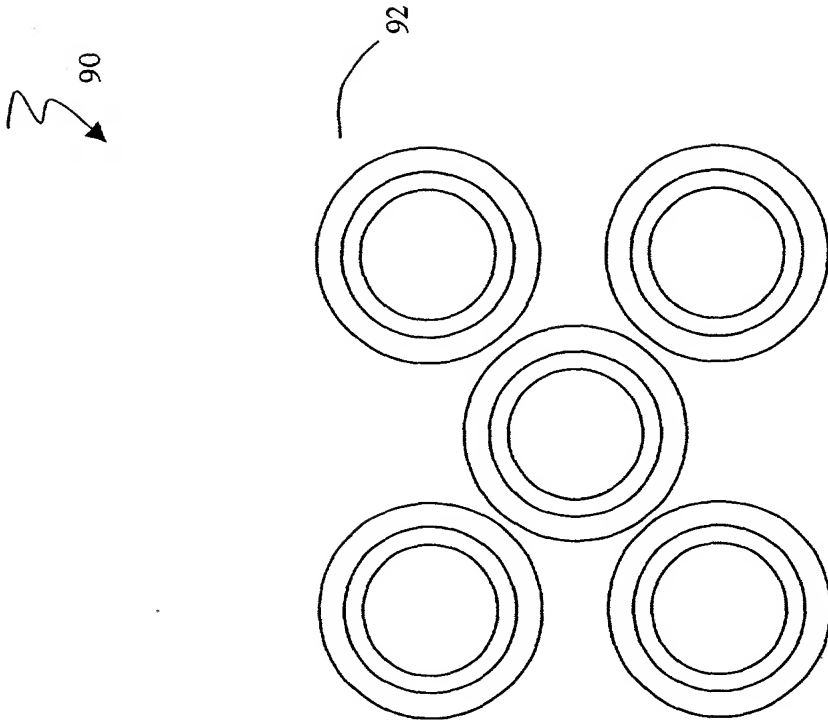


Figure 7

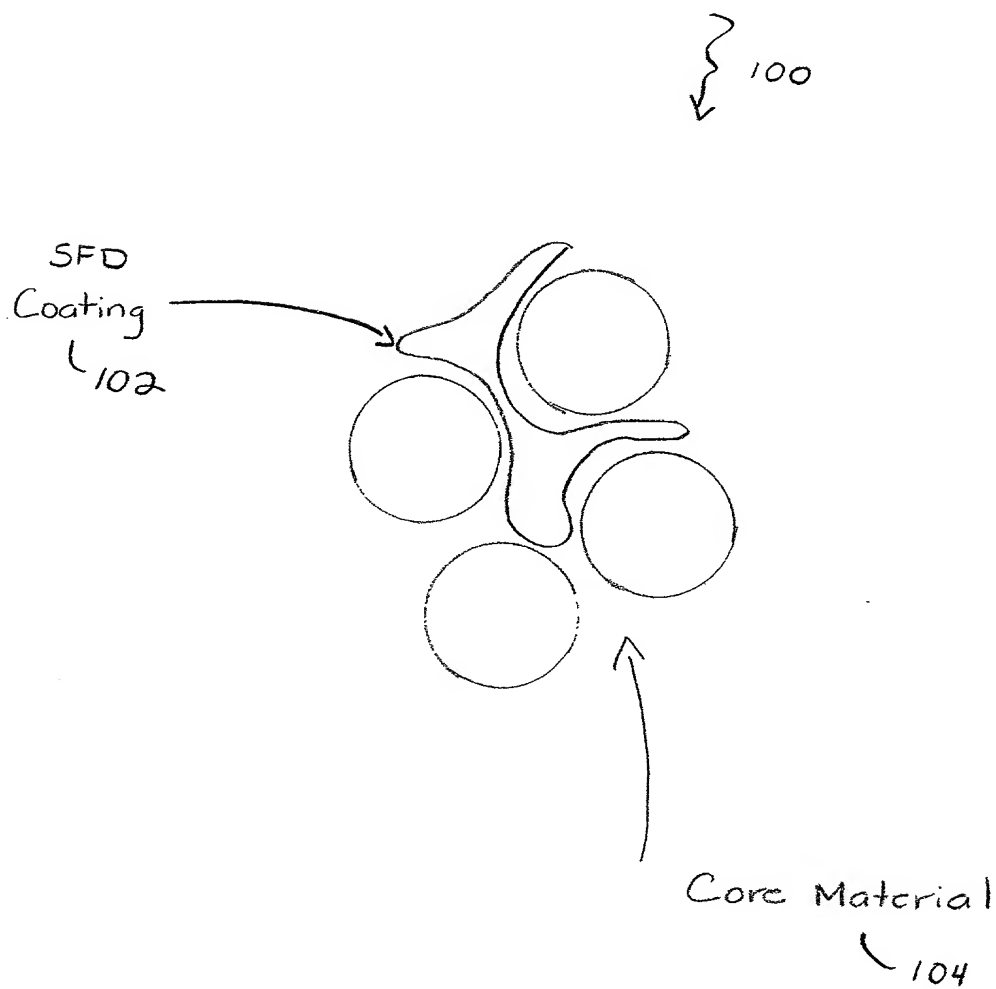


Figure 8

110

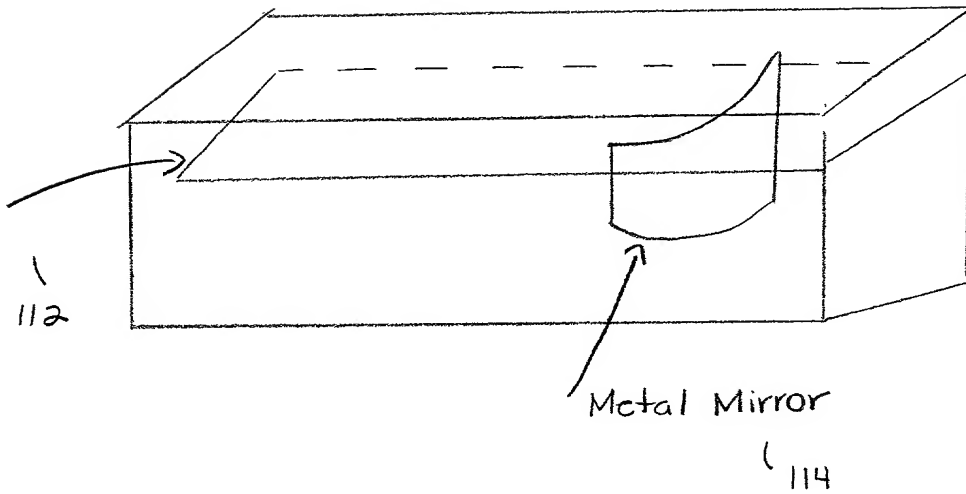


Figure 9

FIG. 10 is a perspective view of a photonic circuit device 120. The device 120 includes a substrate 122 and a multi-layer lens coating 124 for anti-reflection. An arrow indicates the direction of light propagation through the device.

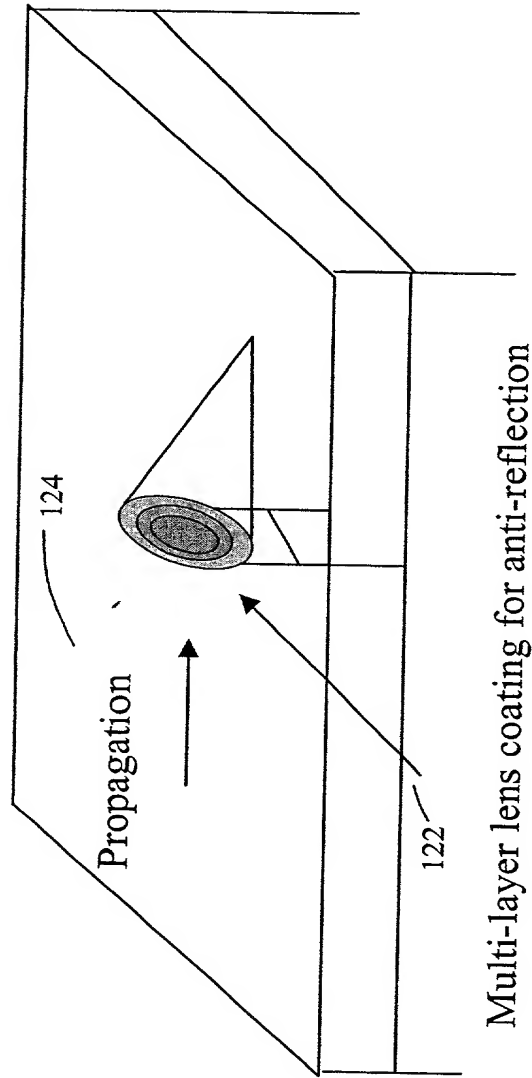


Figure 10

140

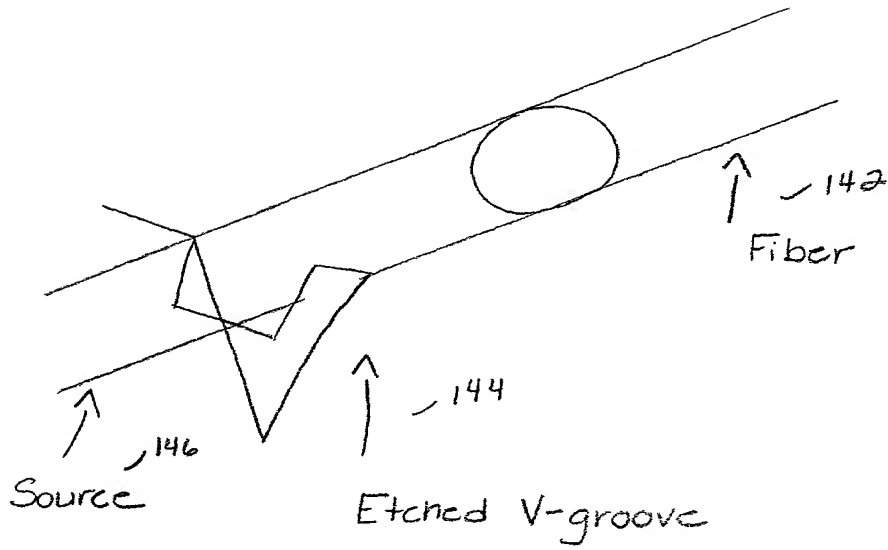


Figure 11A

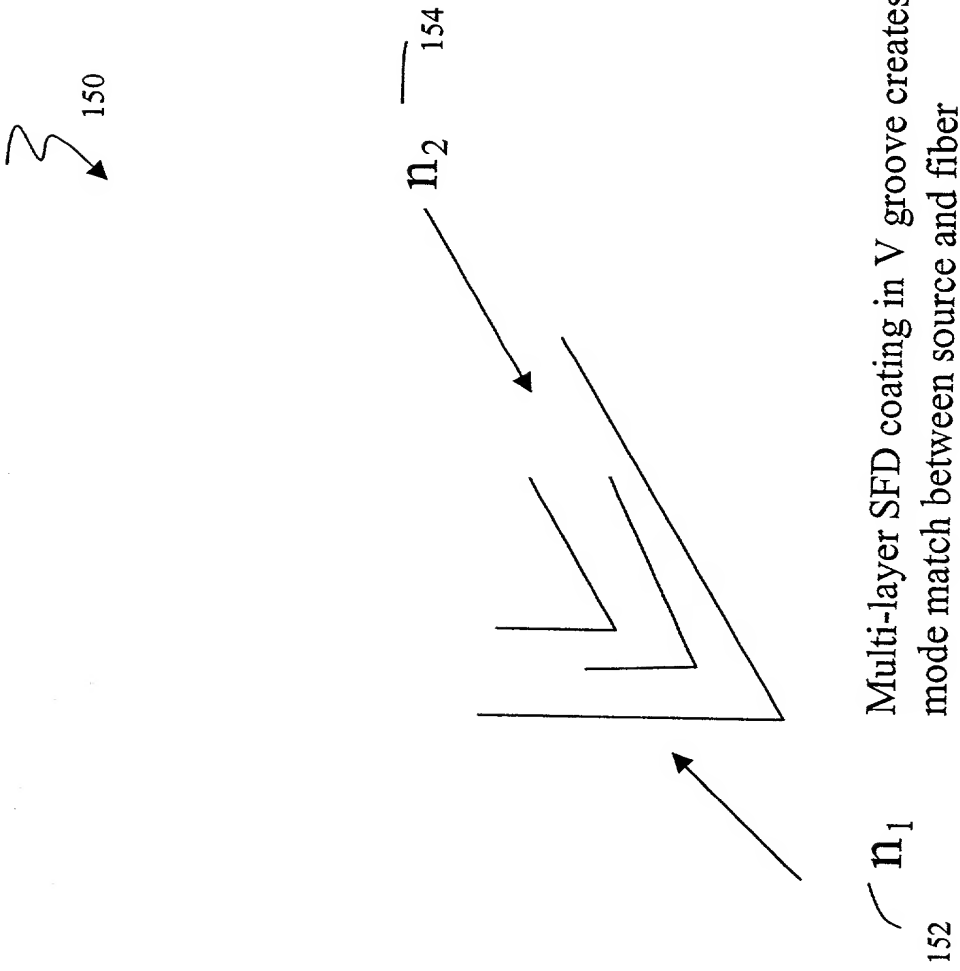


Figure 11B

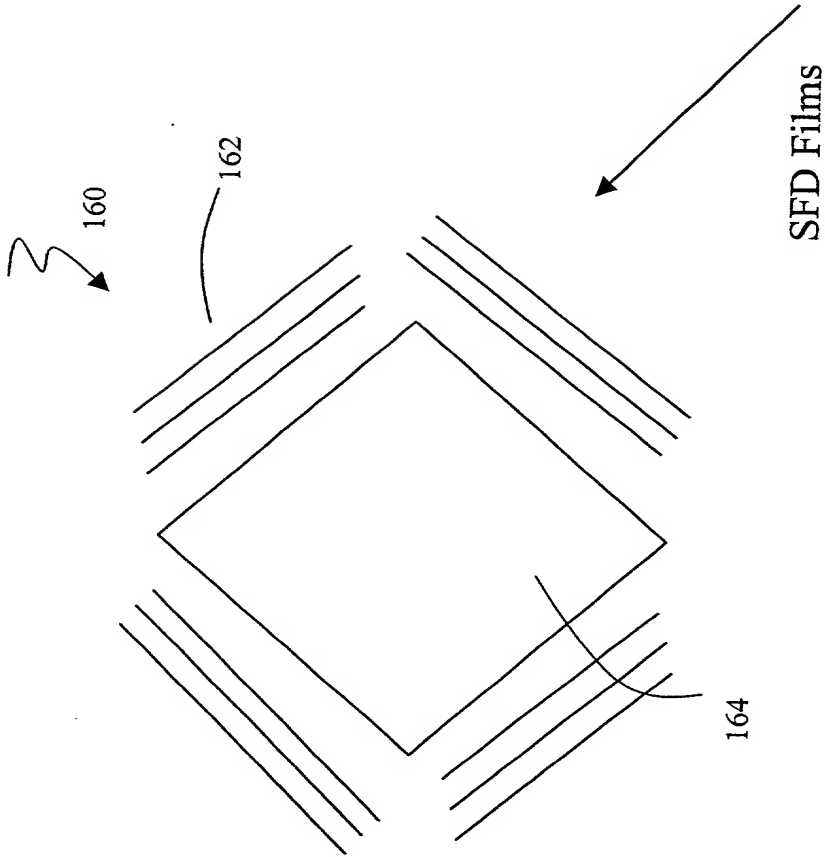


Figure 12

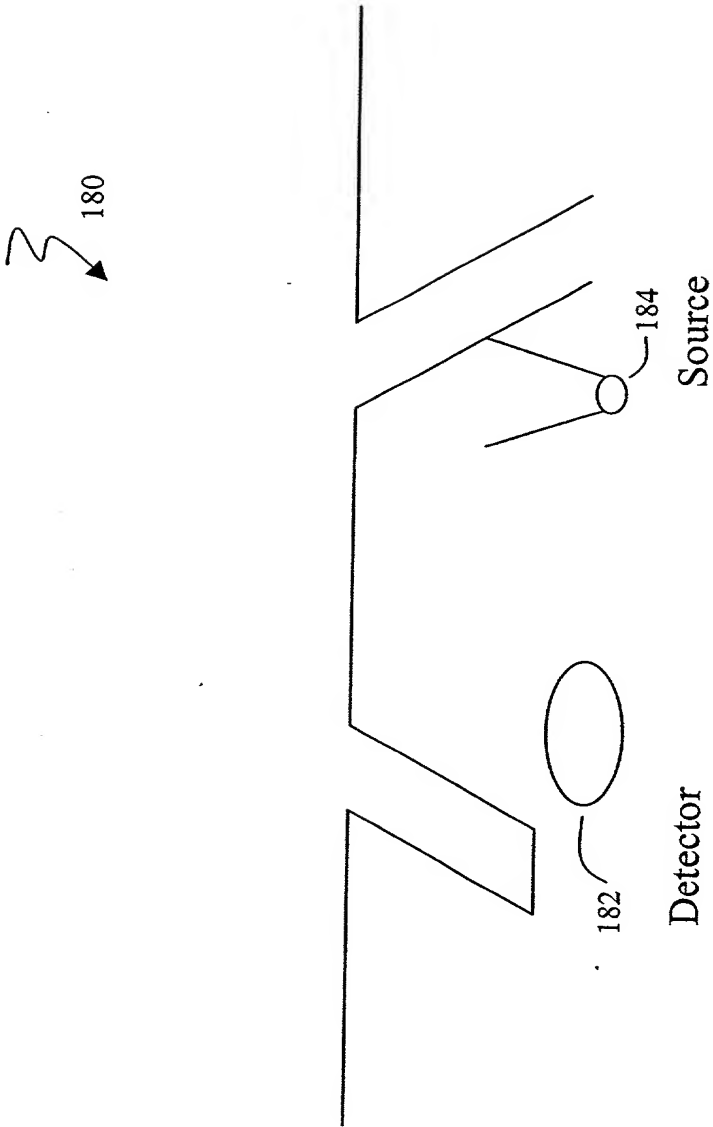


Figure 13A



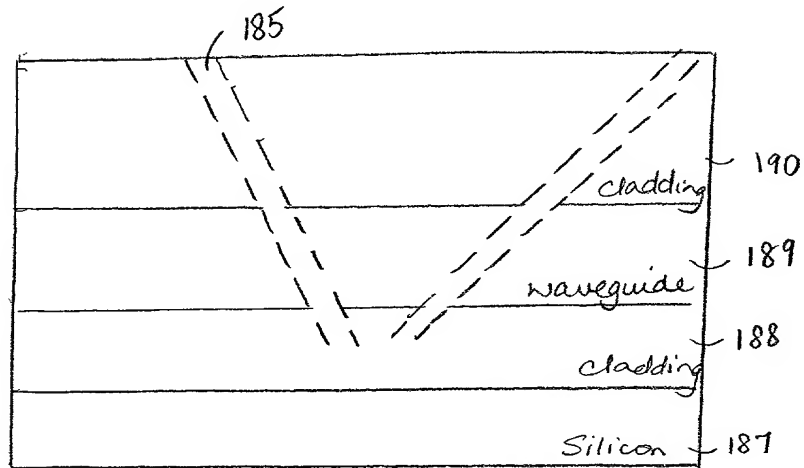


Figure 13B

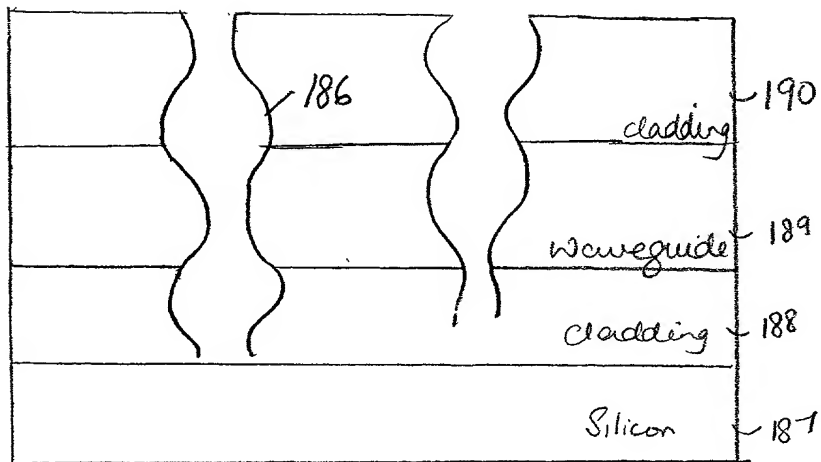
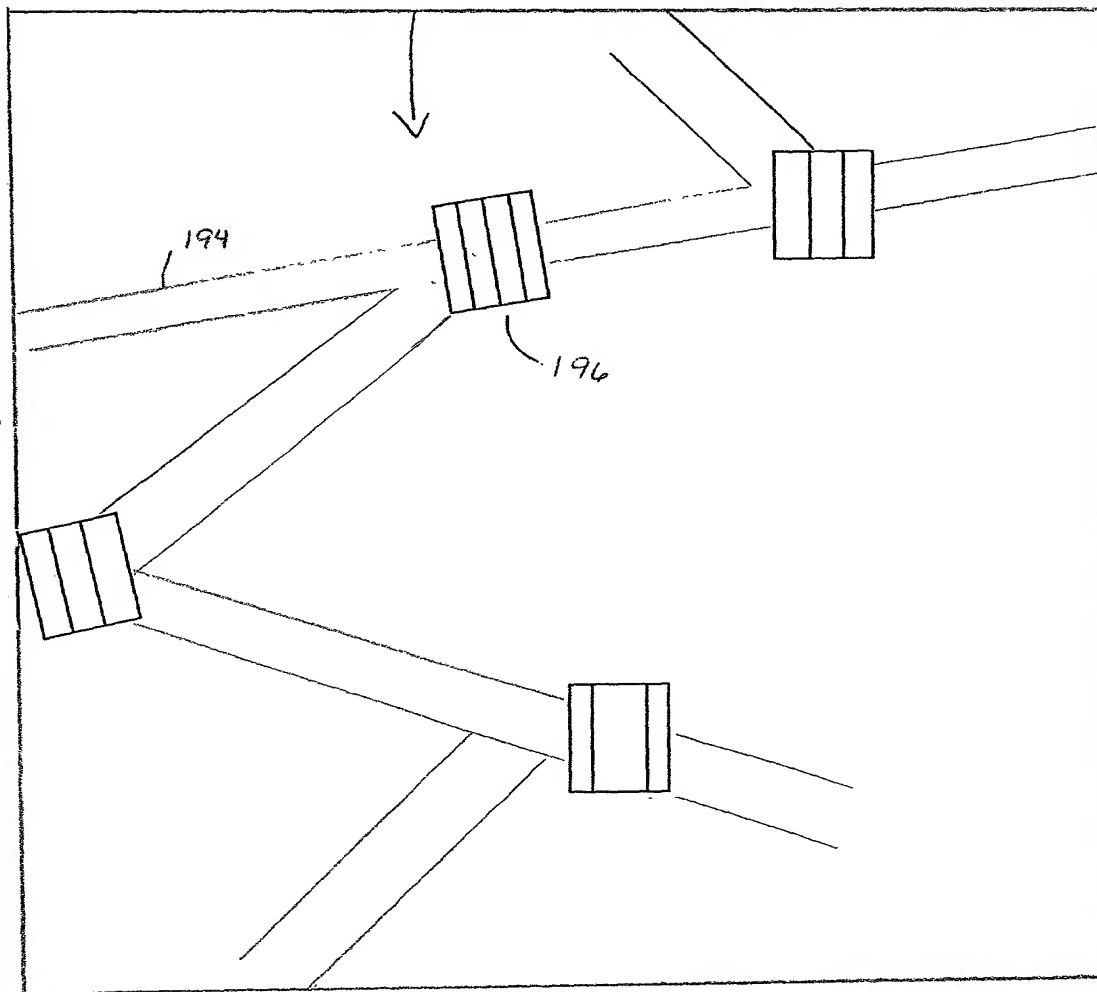


Figure 13C

192

Thin Film Filter



WDM Processing Circuits

Figure 14

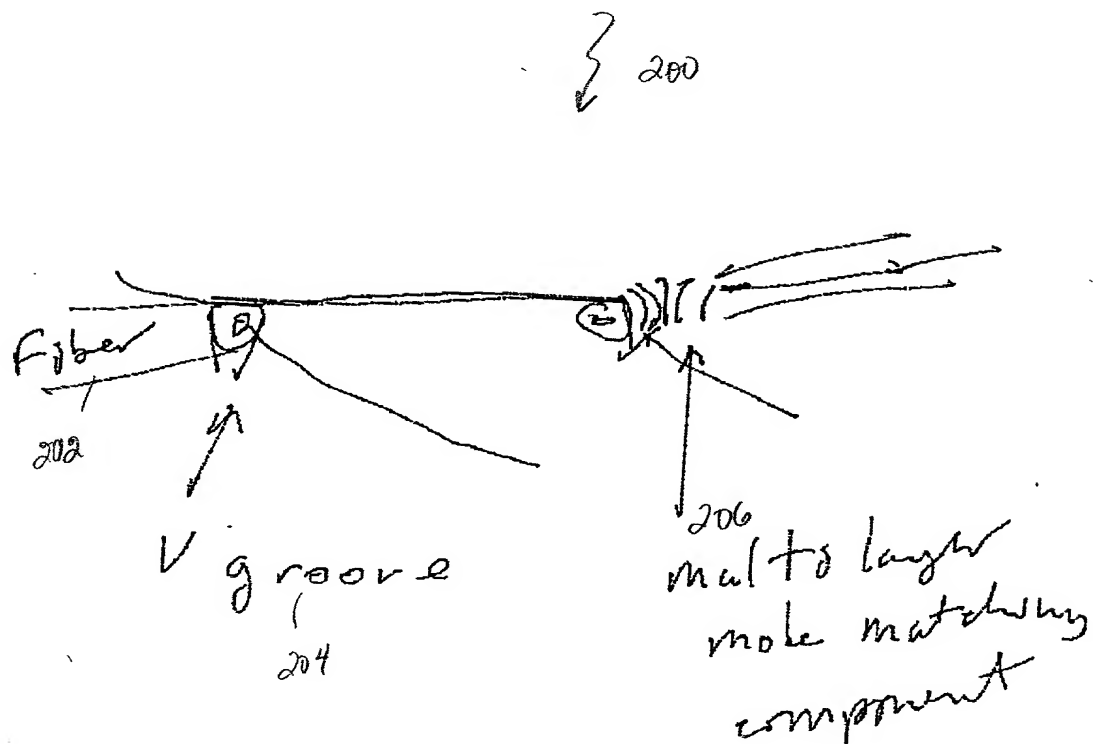


Figure 15

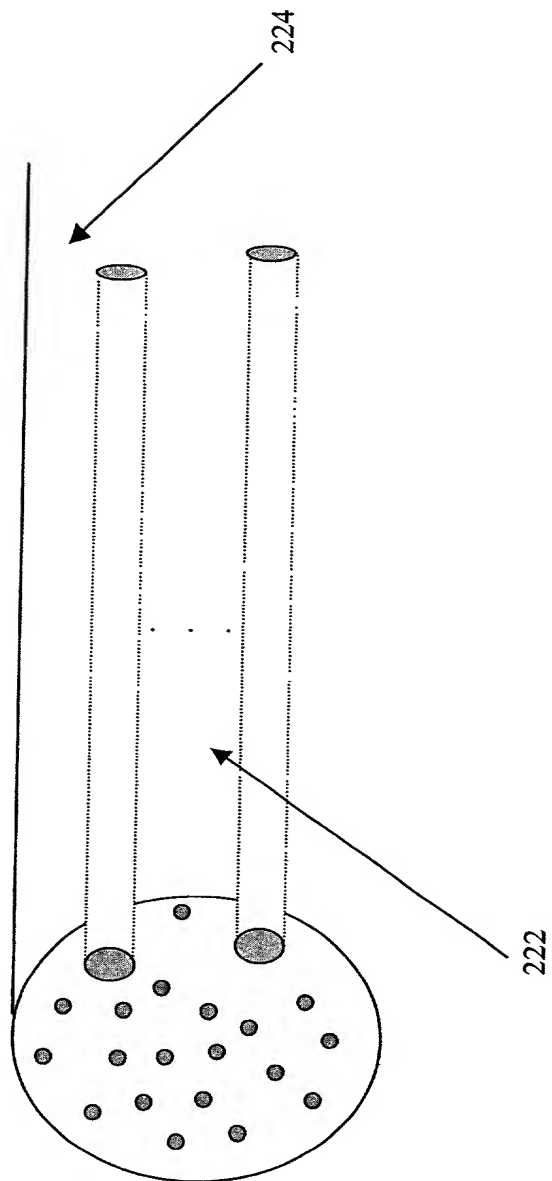


Figure 16

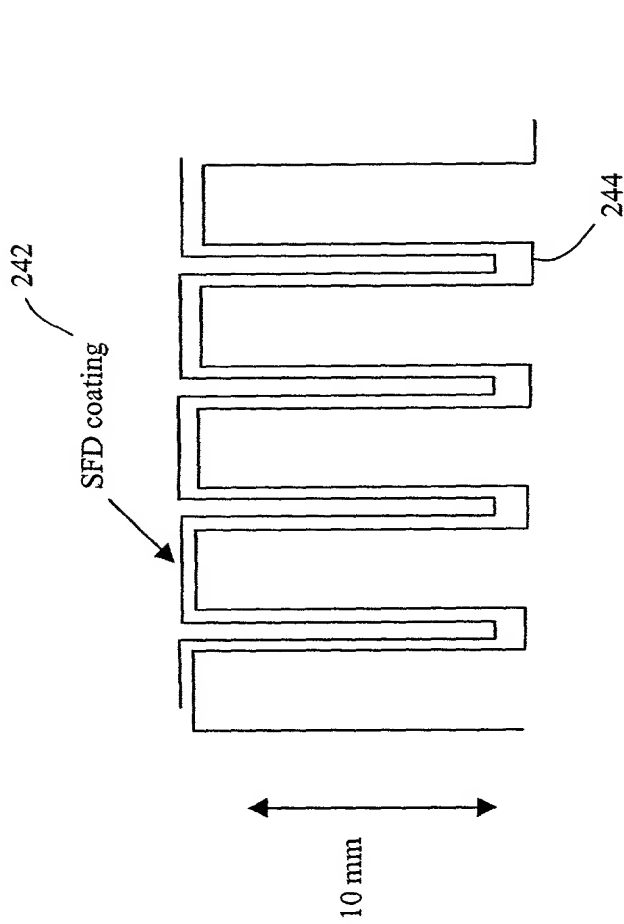


Figure 17

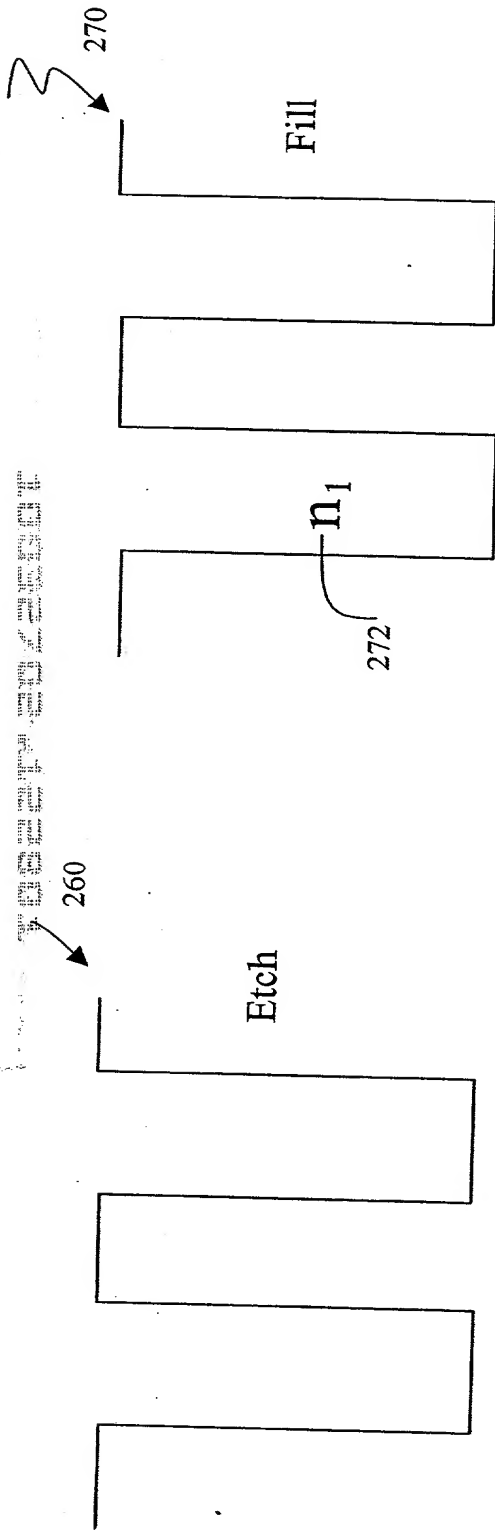


Figure 18A

Figure 18B

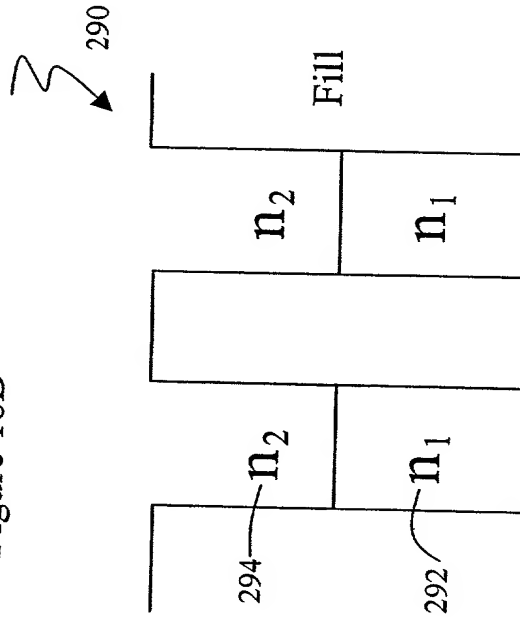


Figure 18D

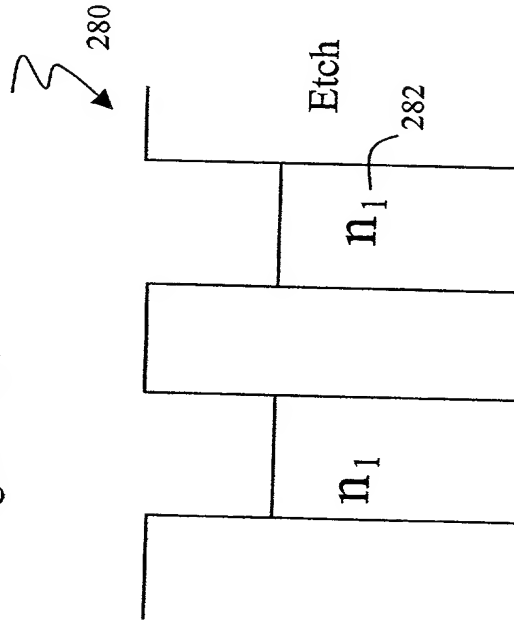


Figure 18C

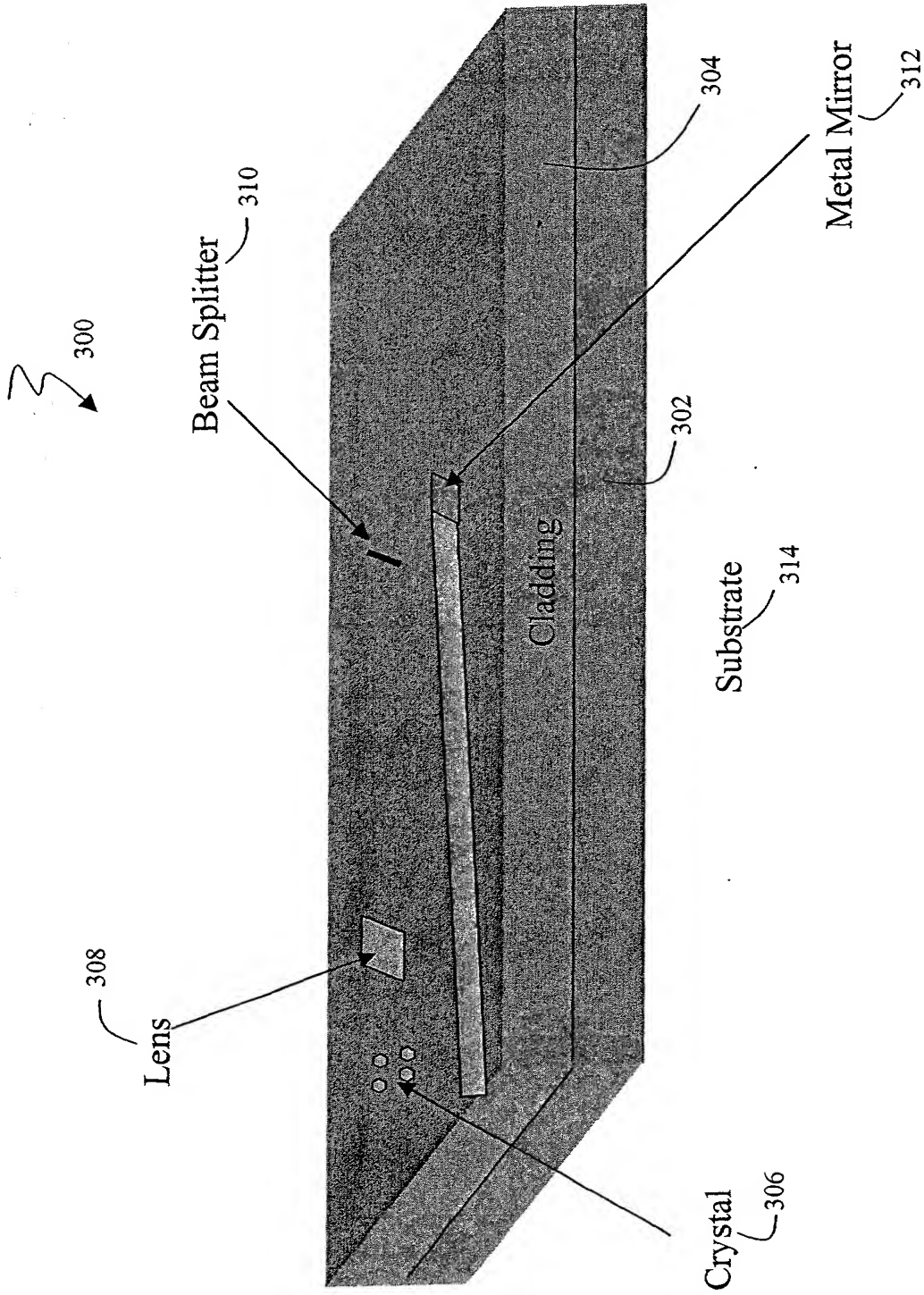


Figure 19

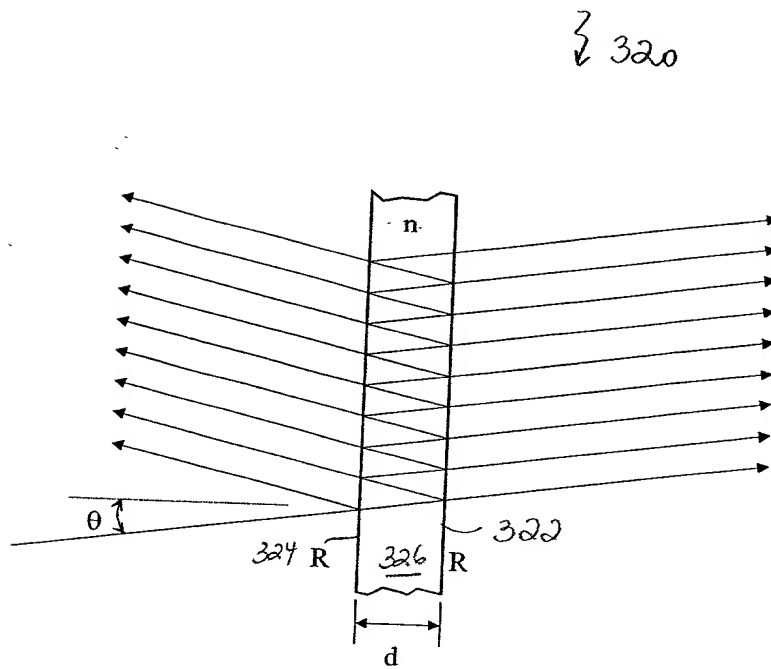


Figure 20



330

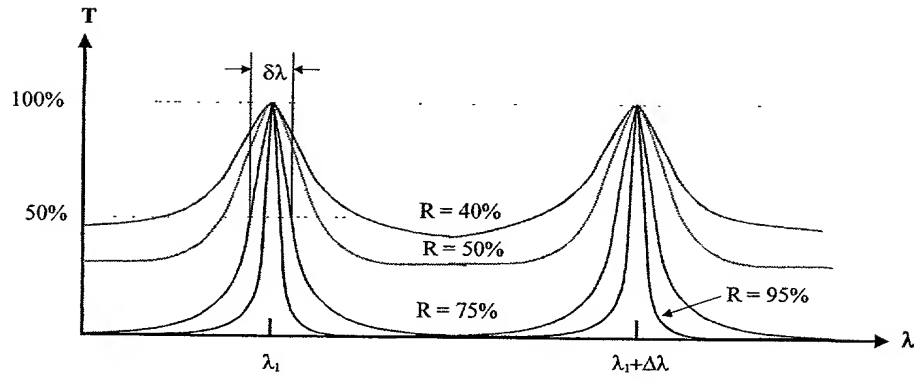


Figure 21

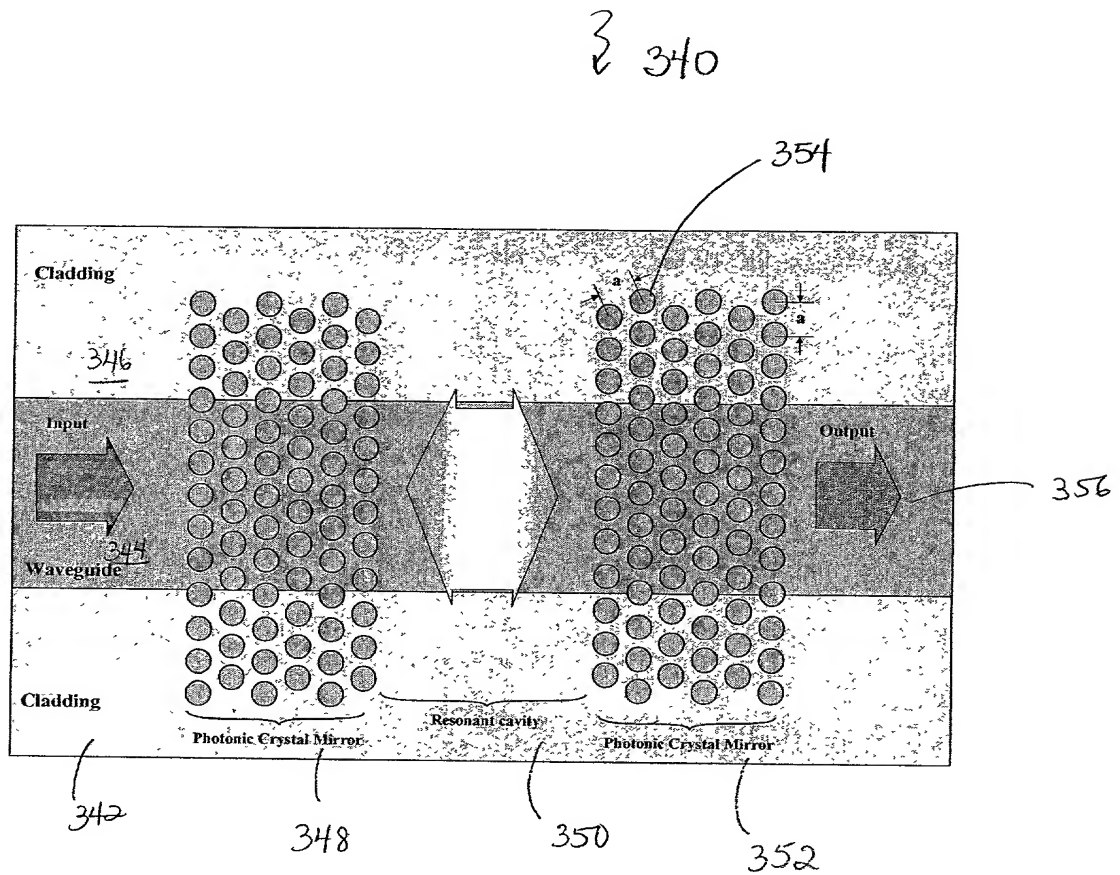


Figure 22

360

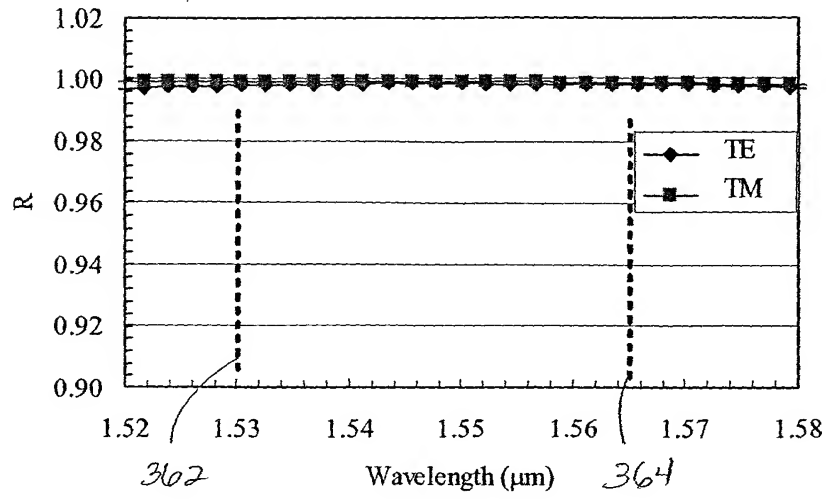


Figure 23

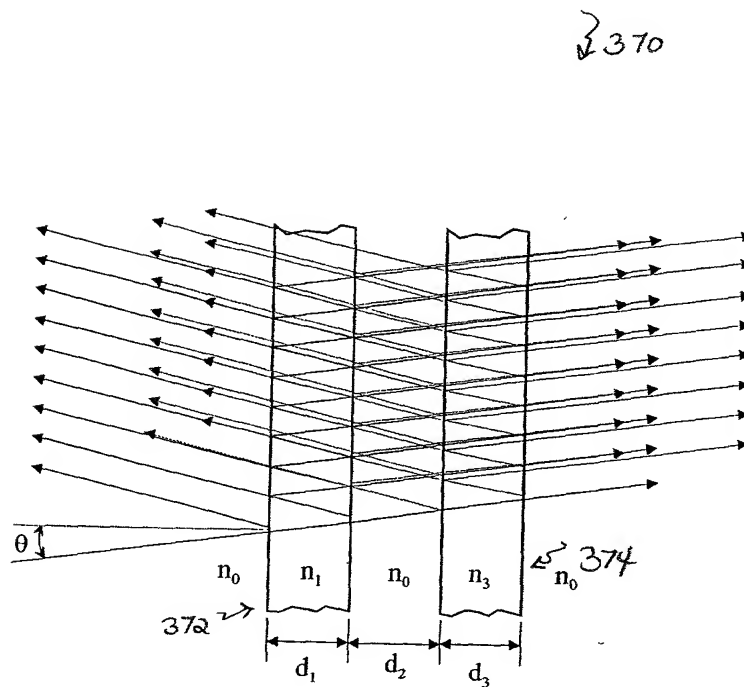


Figure 24

380

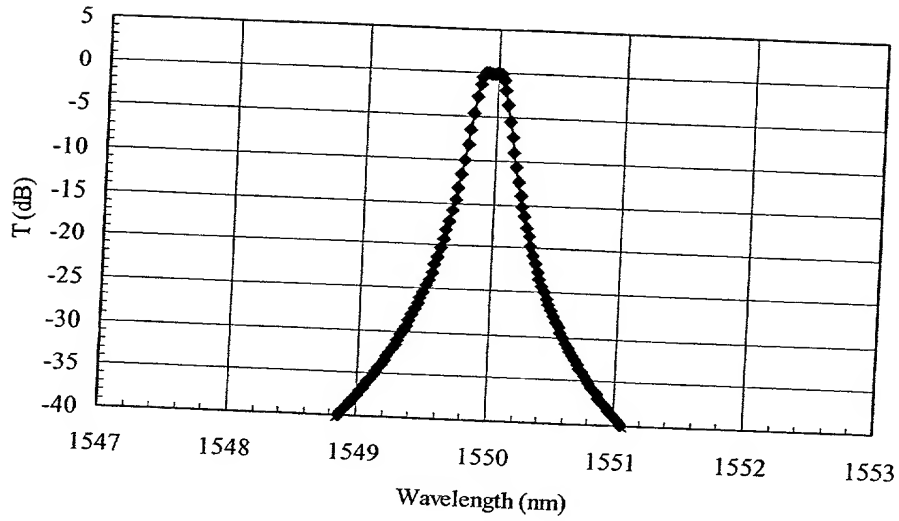


Figure 25

390

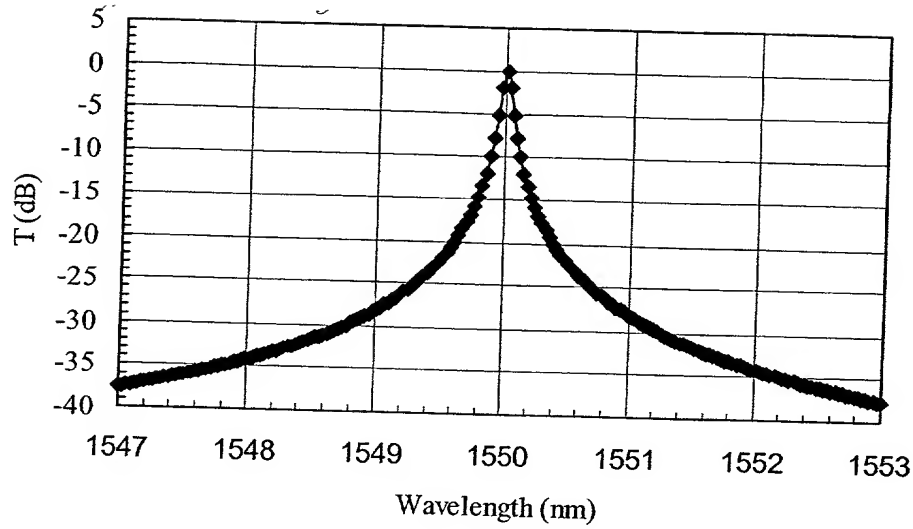


Figure 26

400

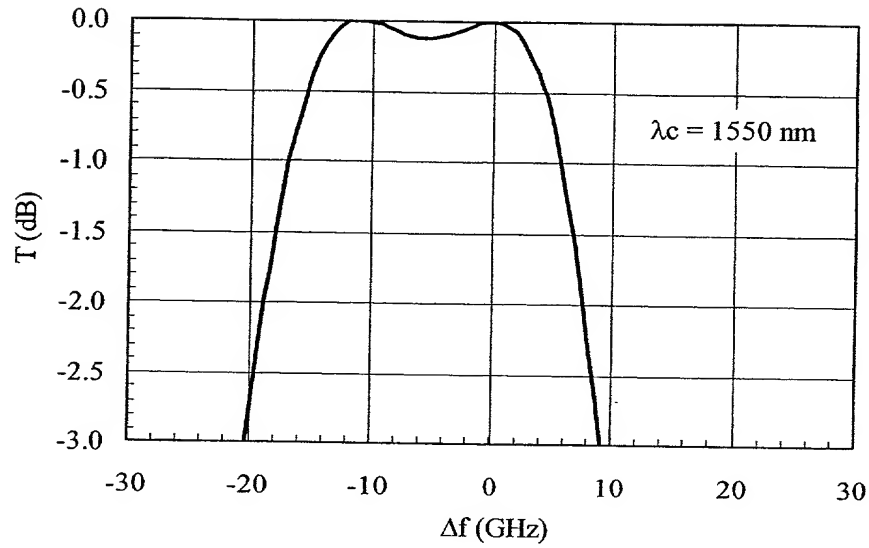


Figure 27

410

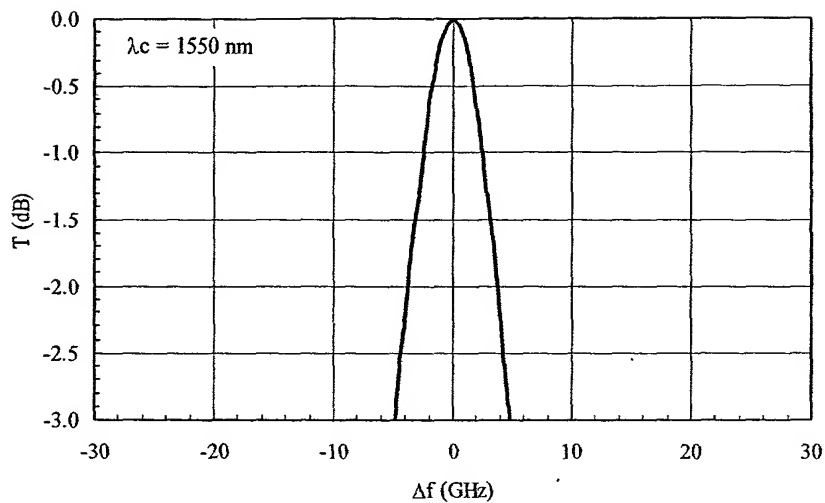
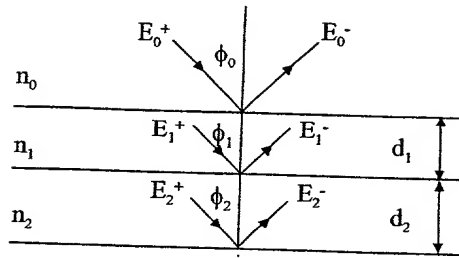


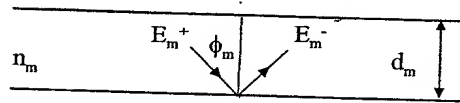
Figure 28





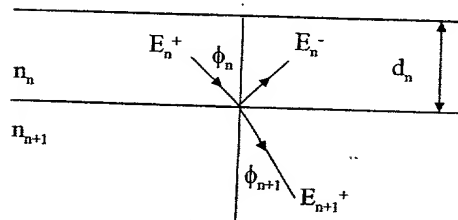
420

Figure 29A



430

Figure 29B



440

Figure 29C

450

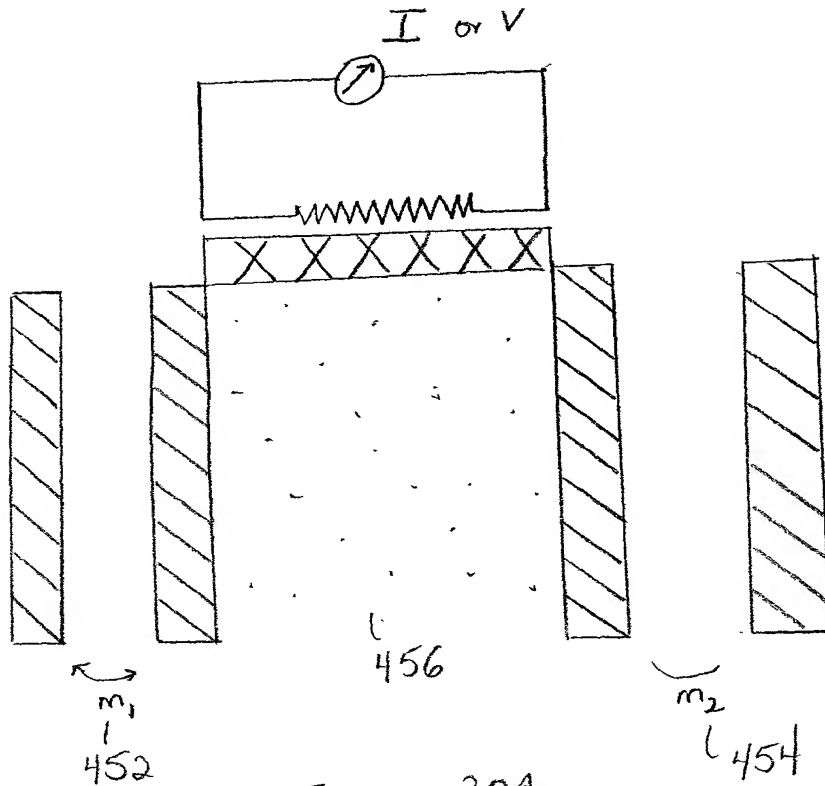


Figure 30A

470

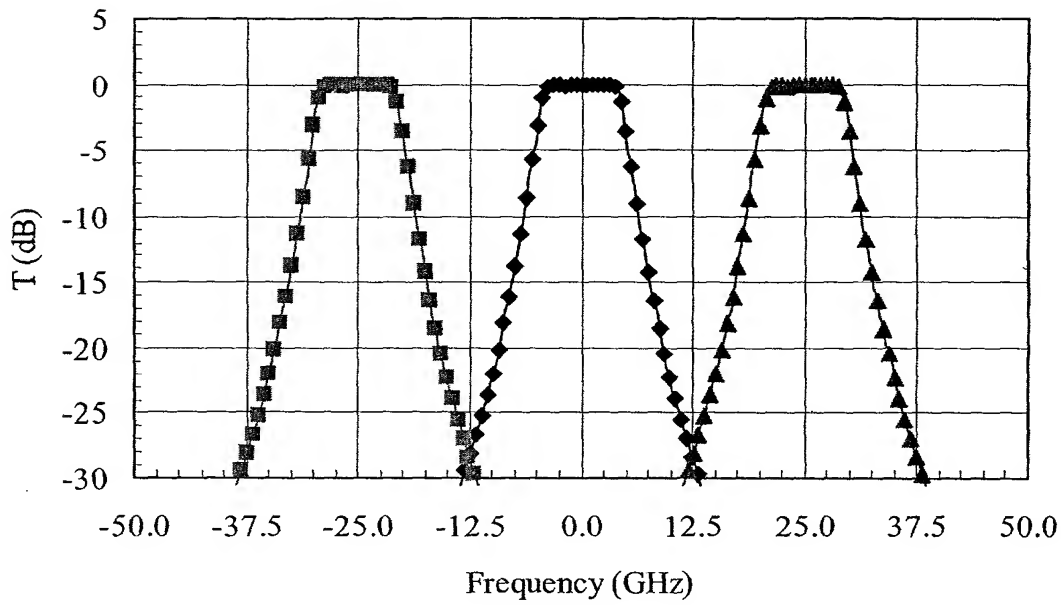


Figure 30B

3 480

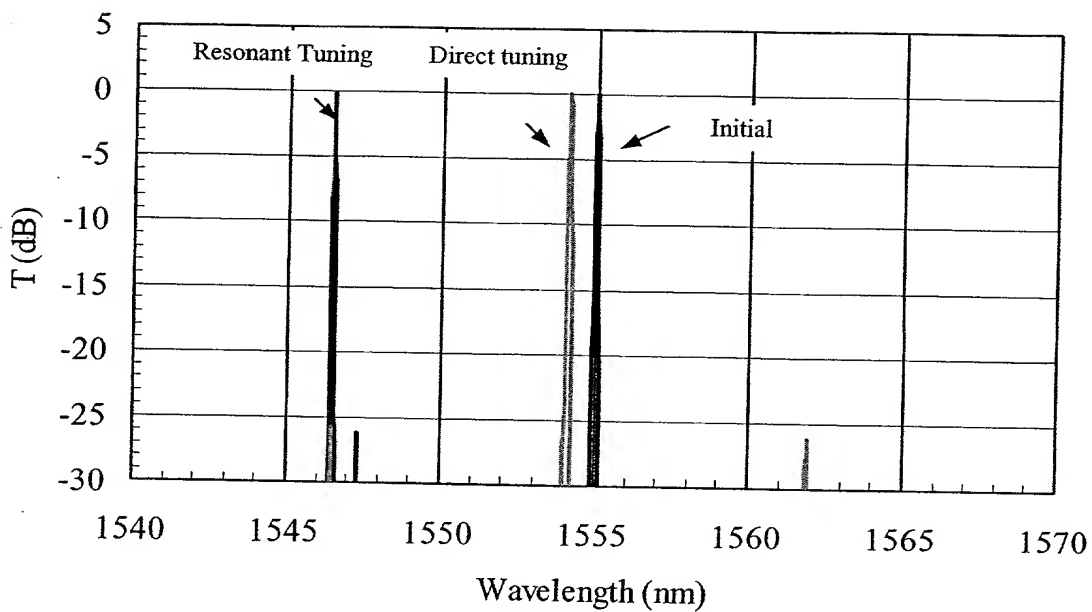


Figure 31

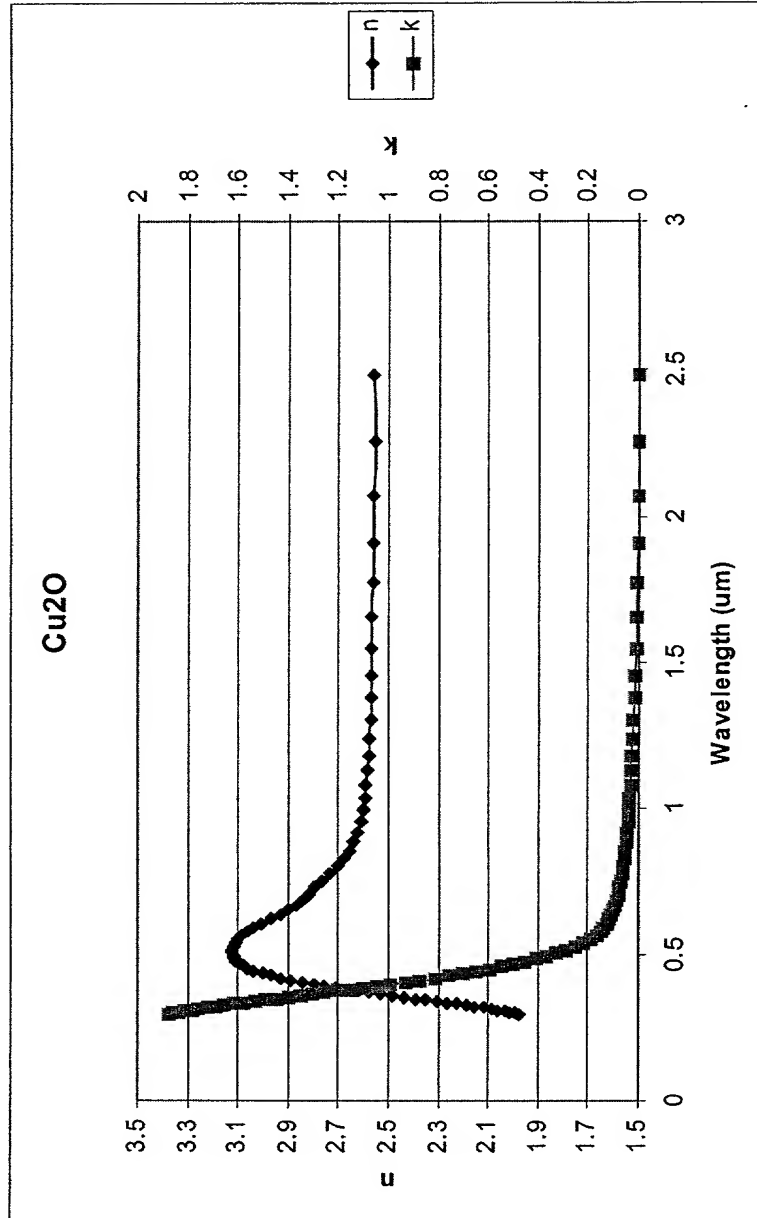


Figure 32

500

520

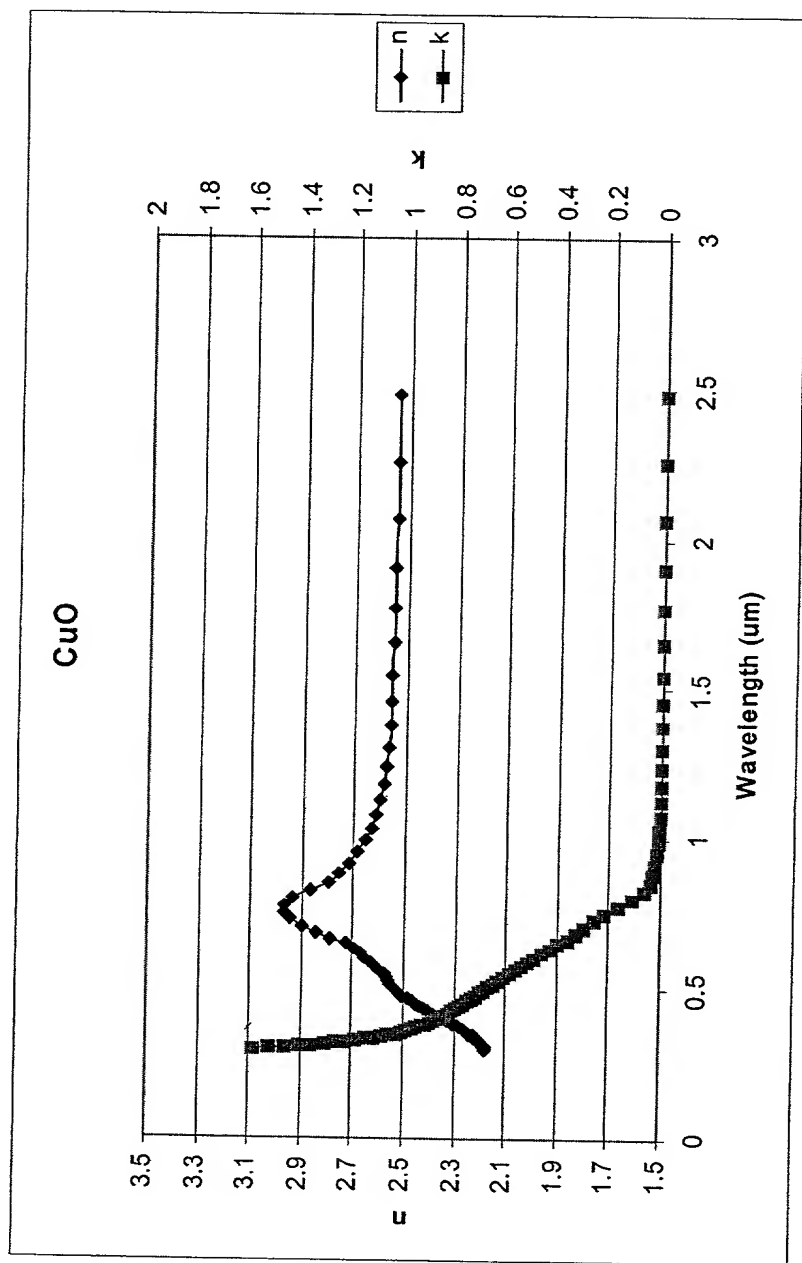


Figure 33

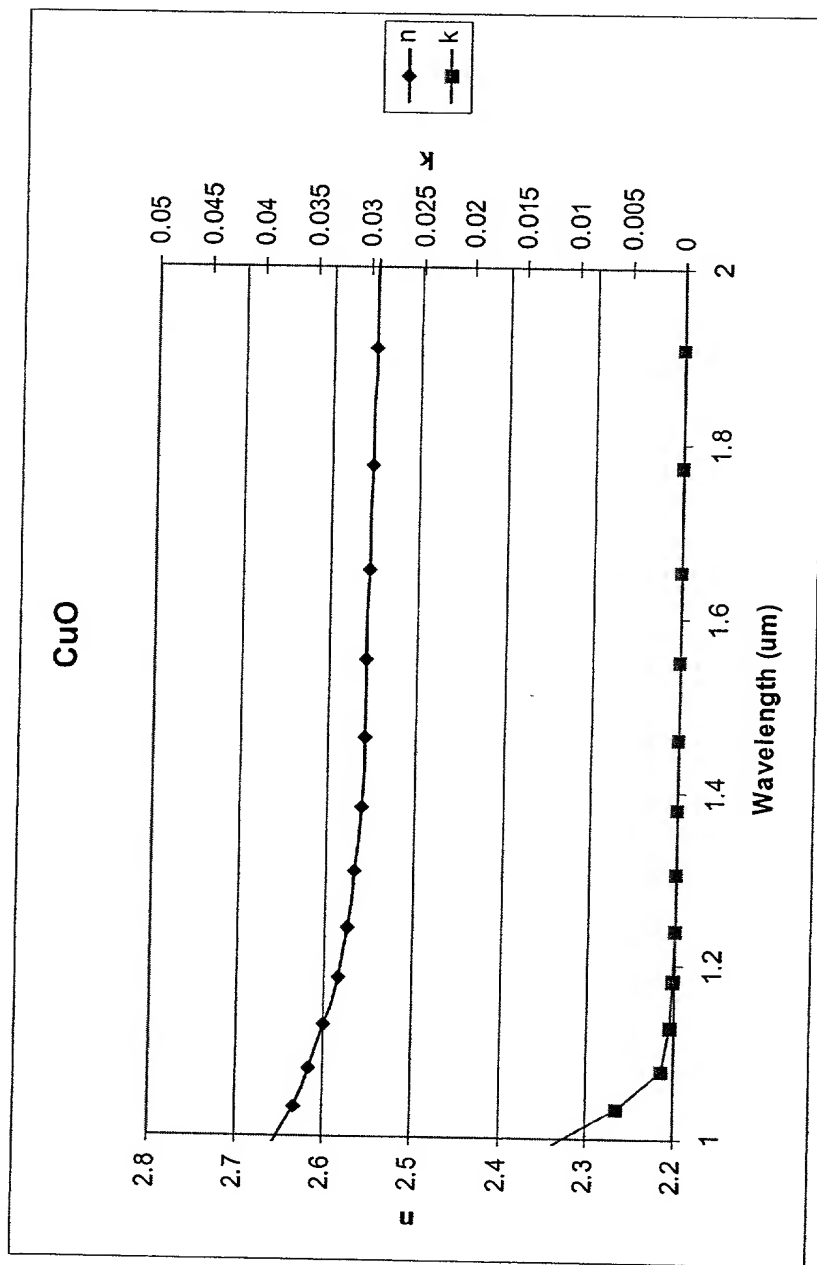


Figure 34

530  
 2.530

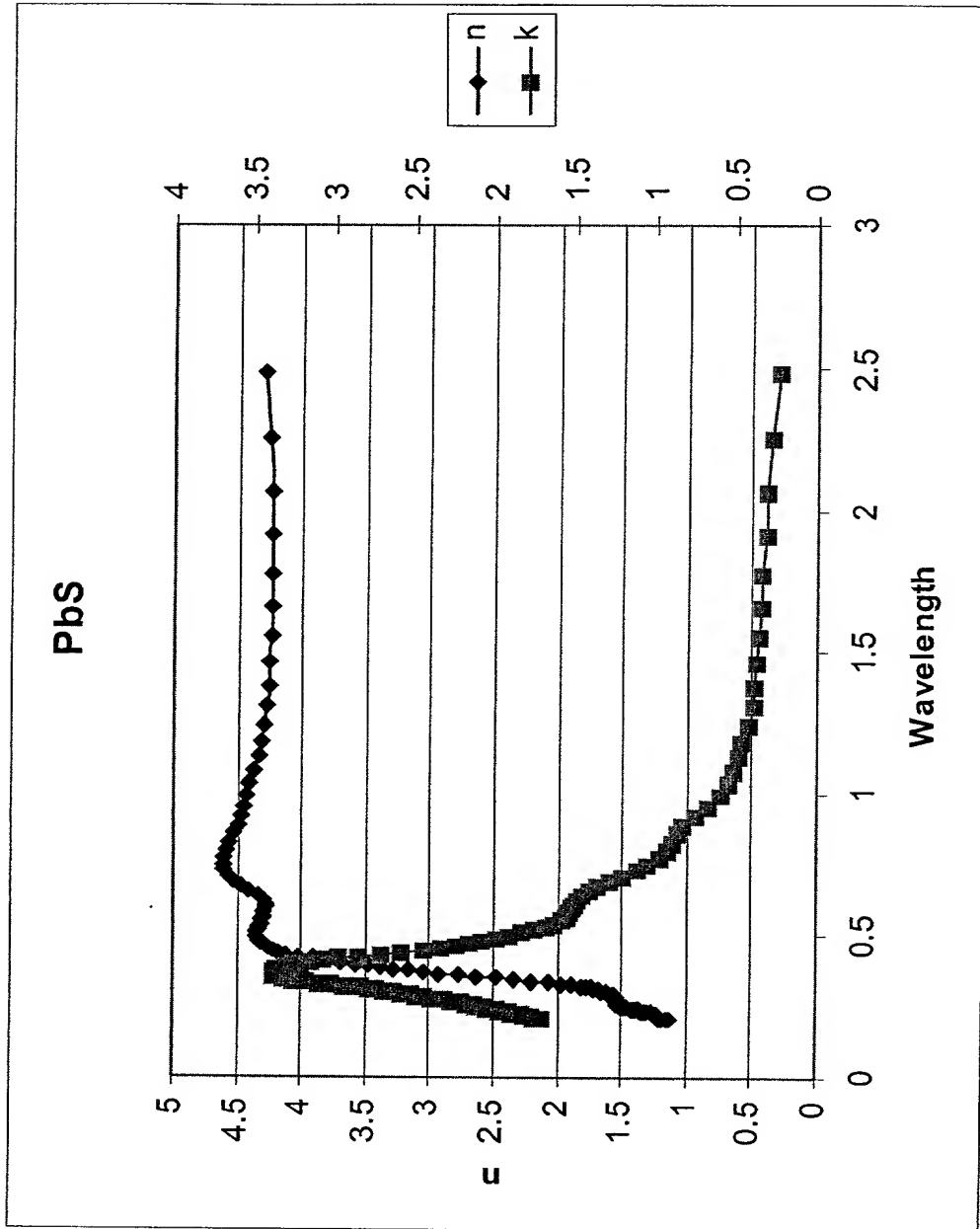


Figure 35

540



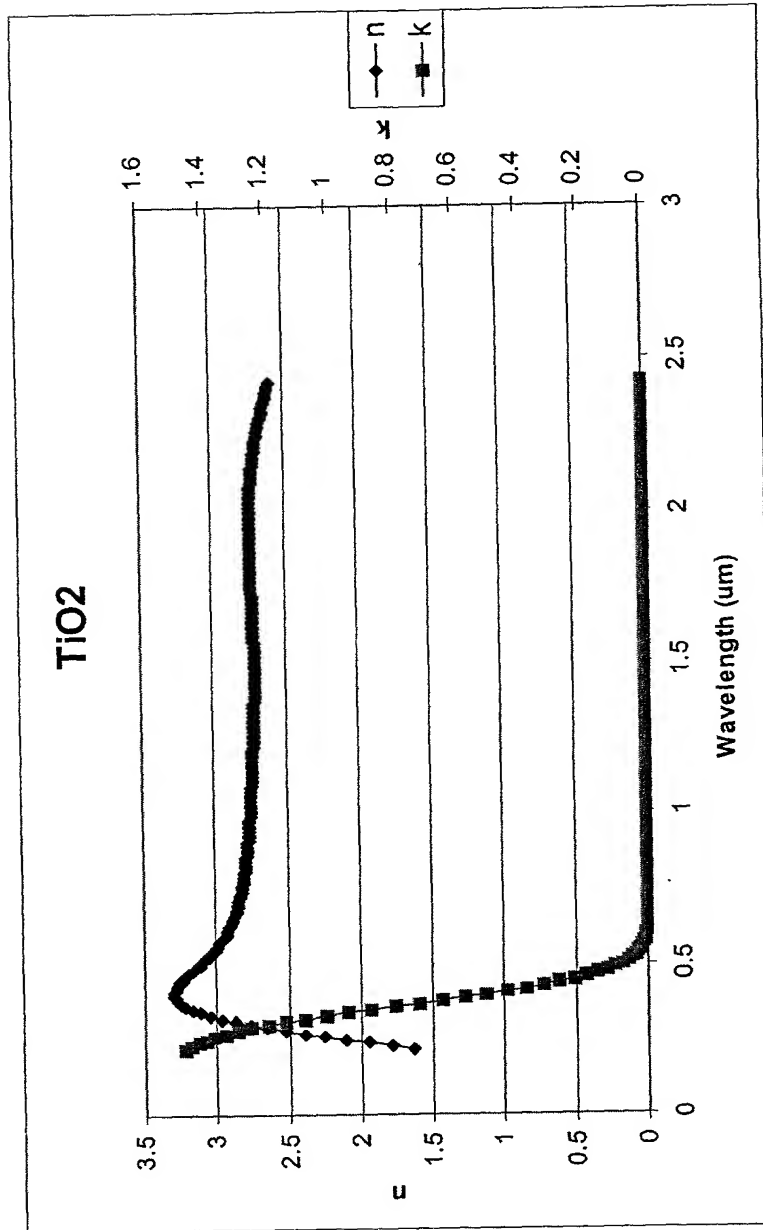


Figure 36

2550

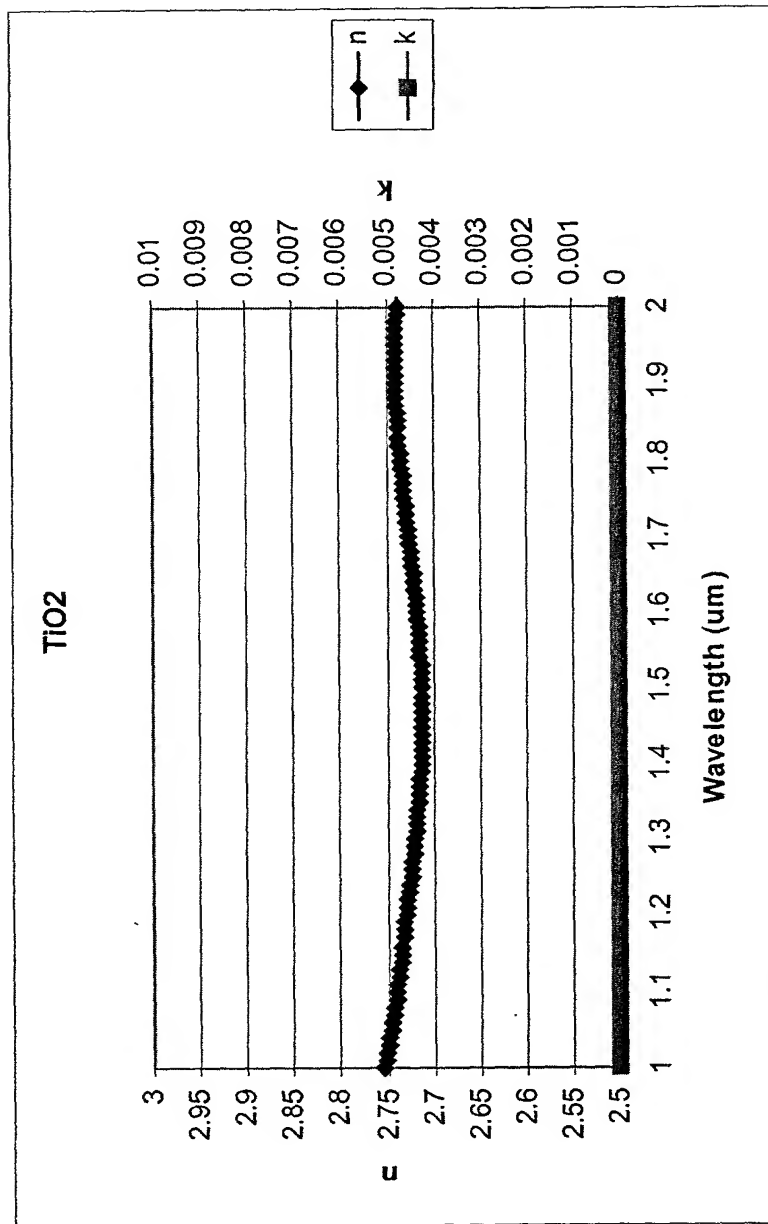


Figure 37

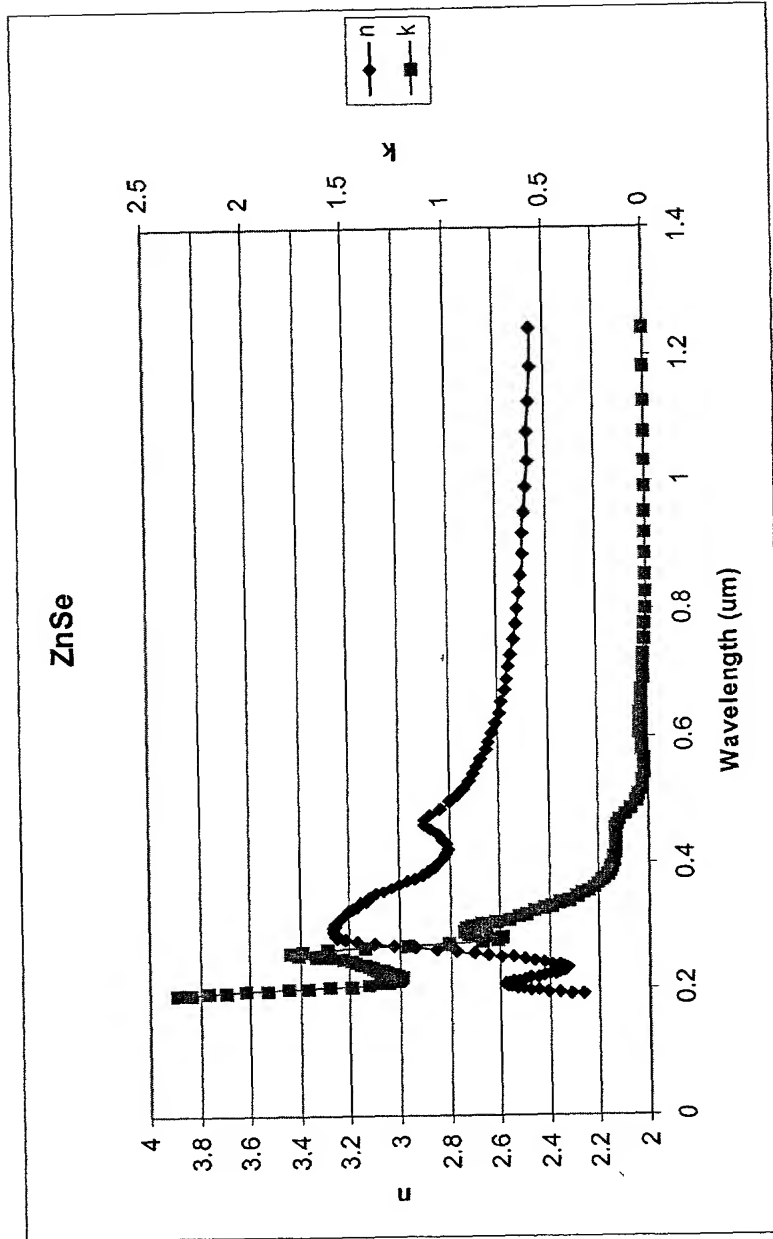


Figure 38

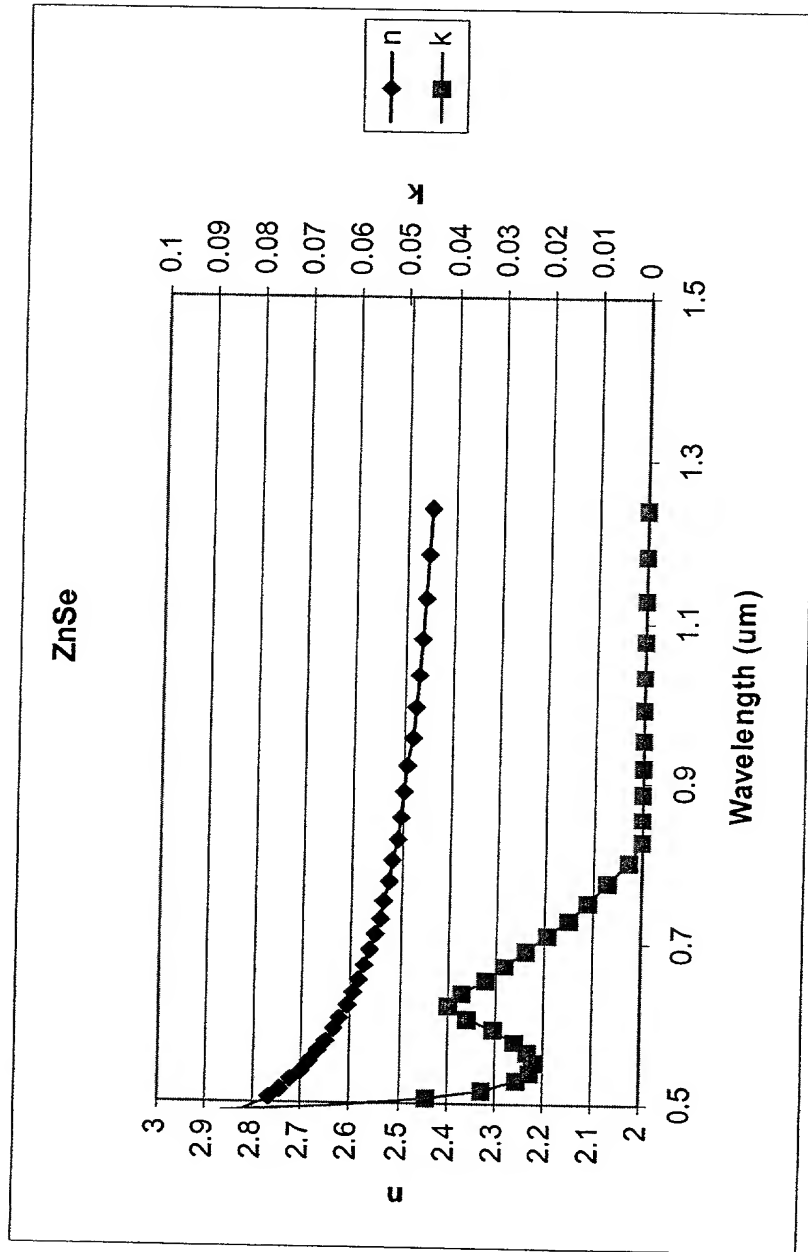


Figure 39

580

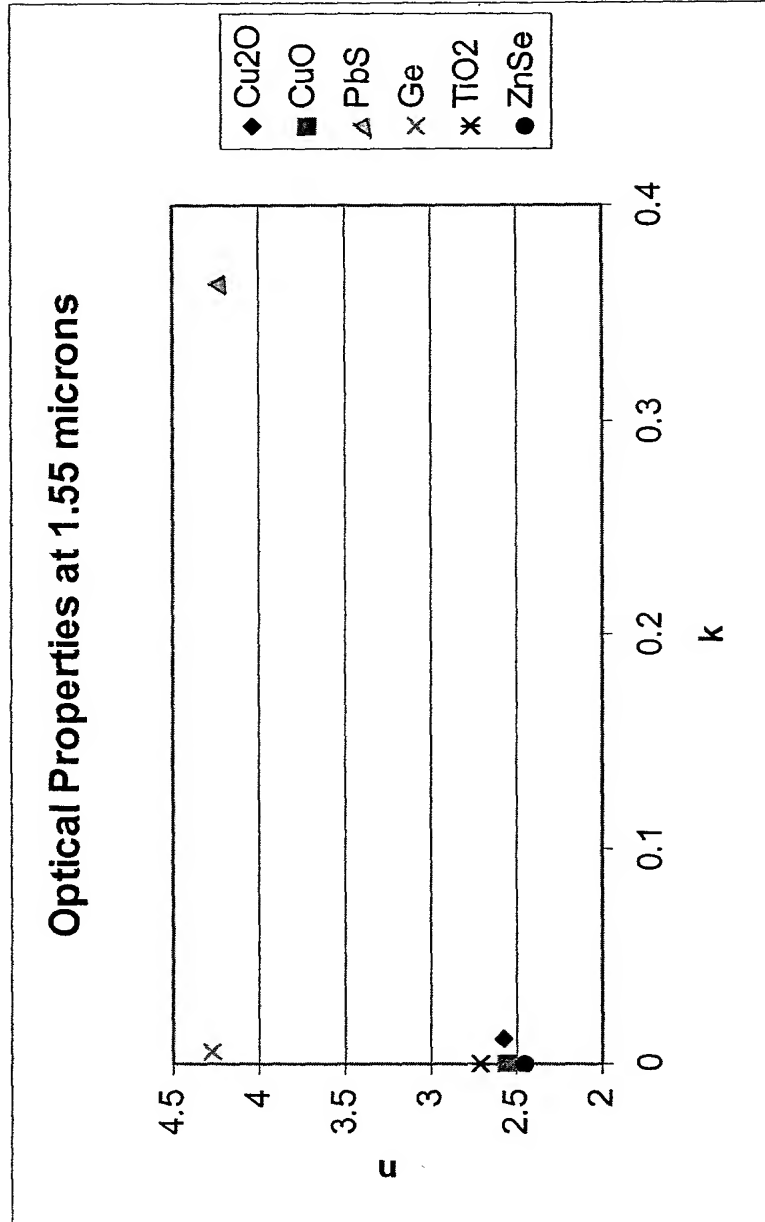
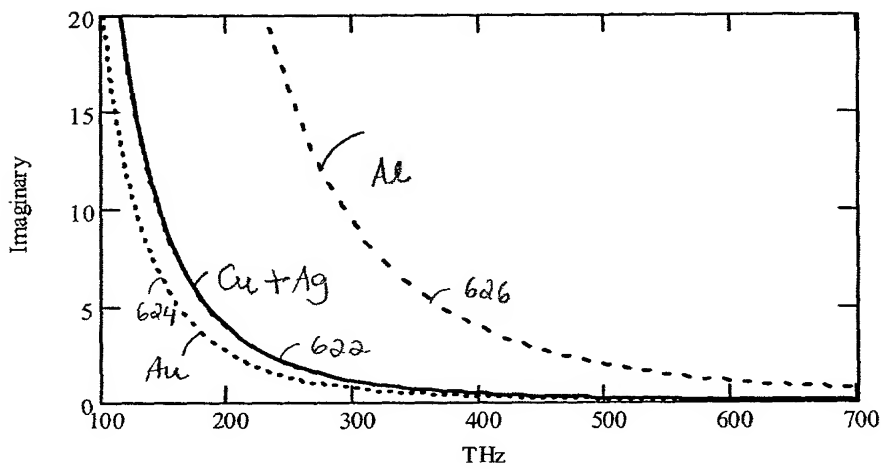
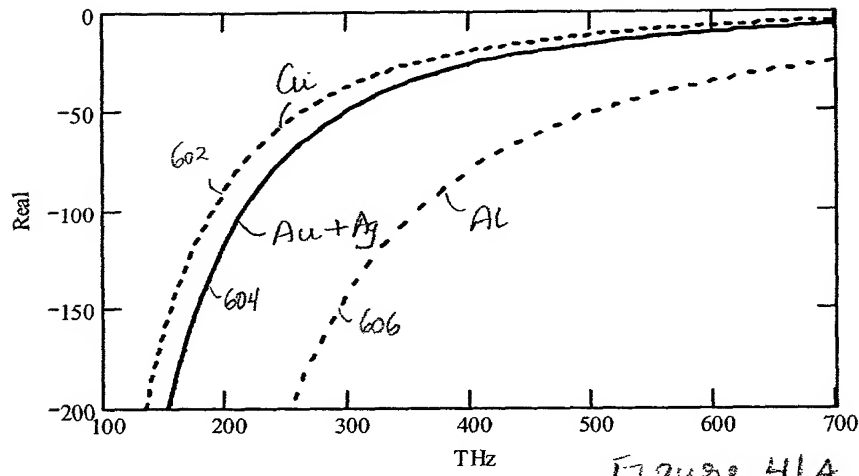


Figure 40



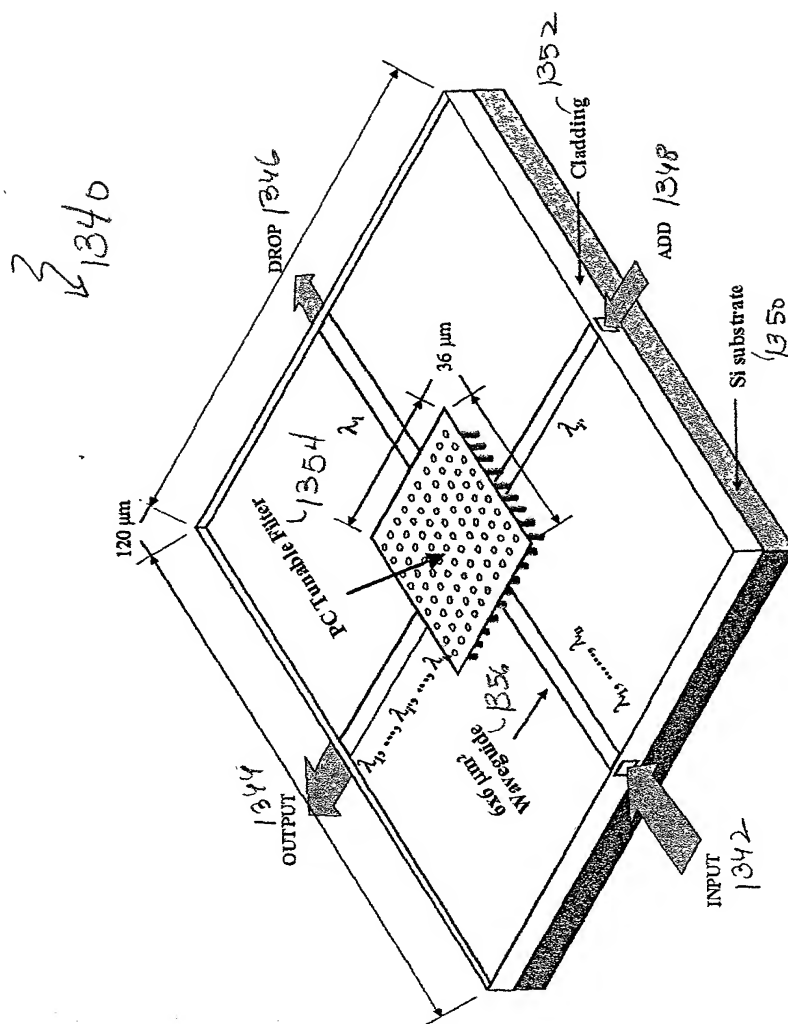


Figure 42 A

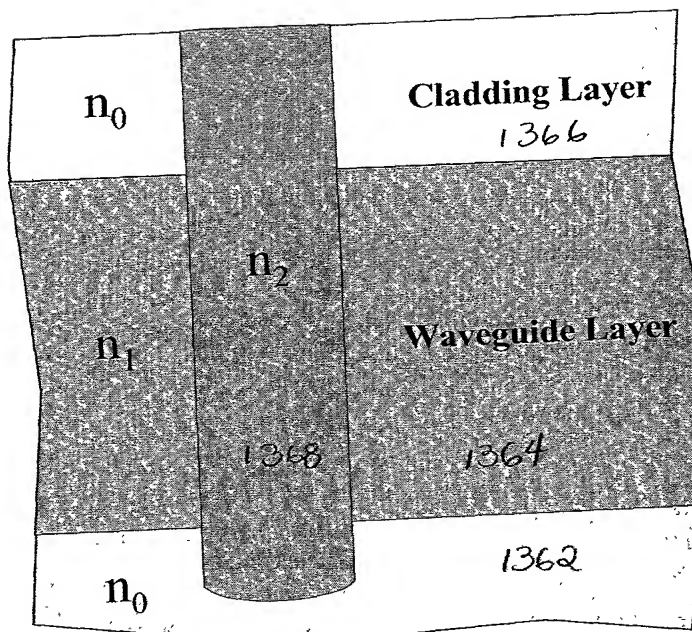


Figure 42B



1380

multi-layer

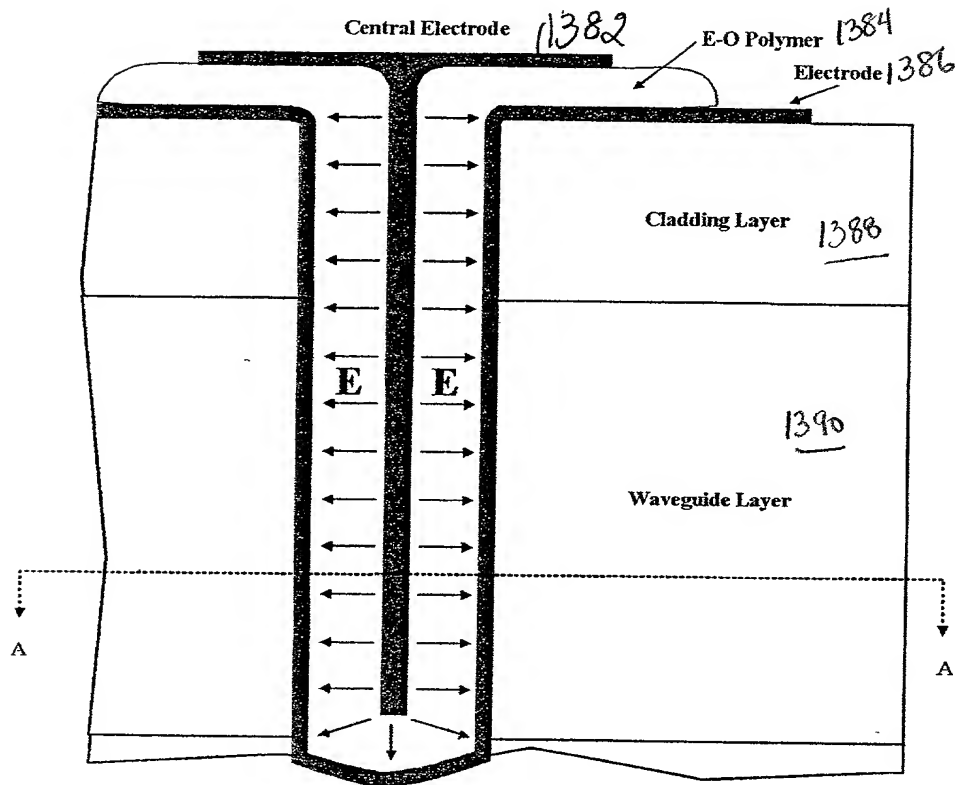
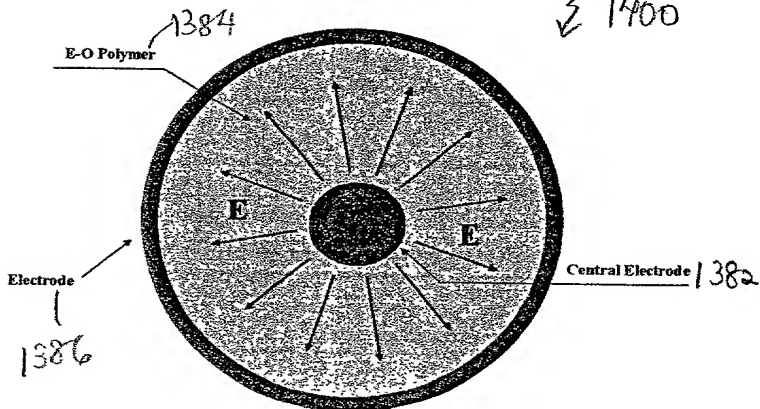


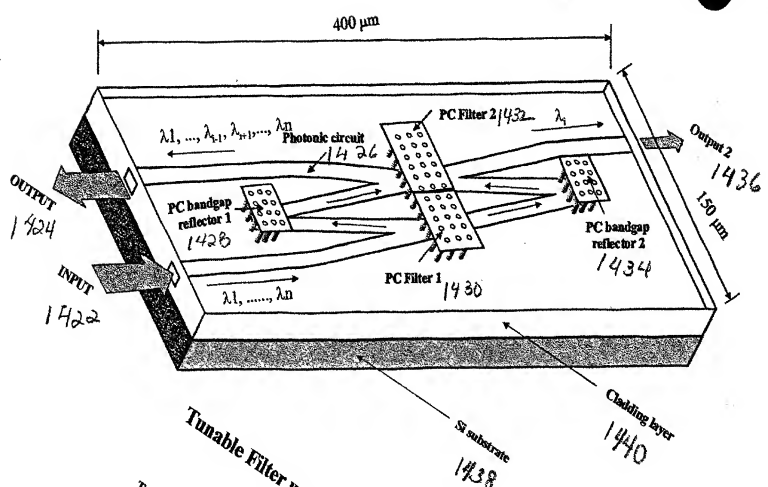
Figure 42C  
Micro-View of PC unit

1400

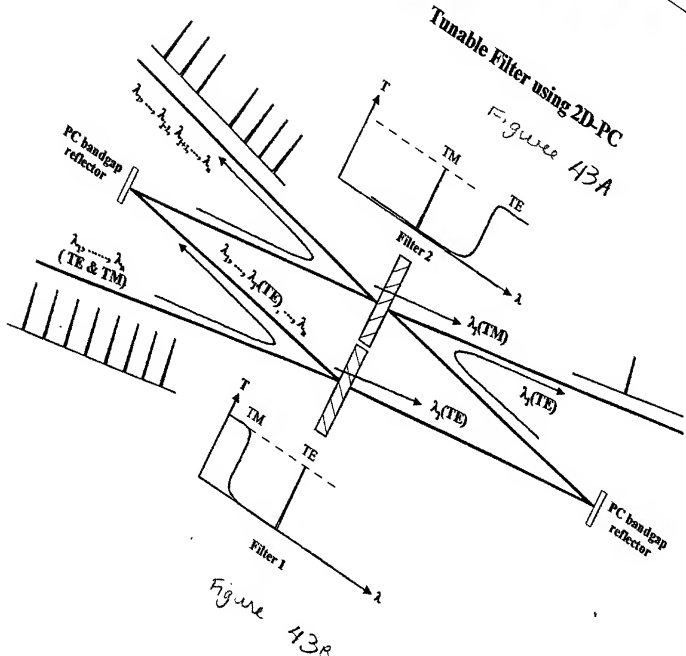


A-A View

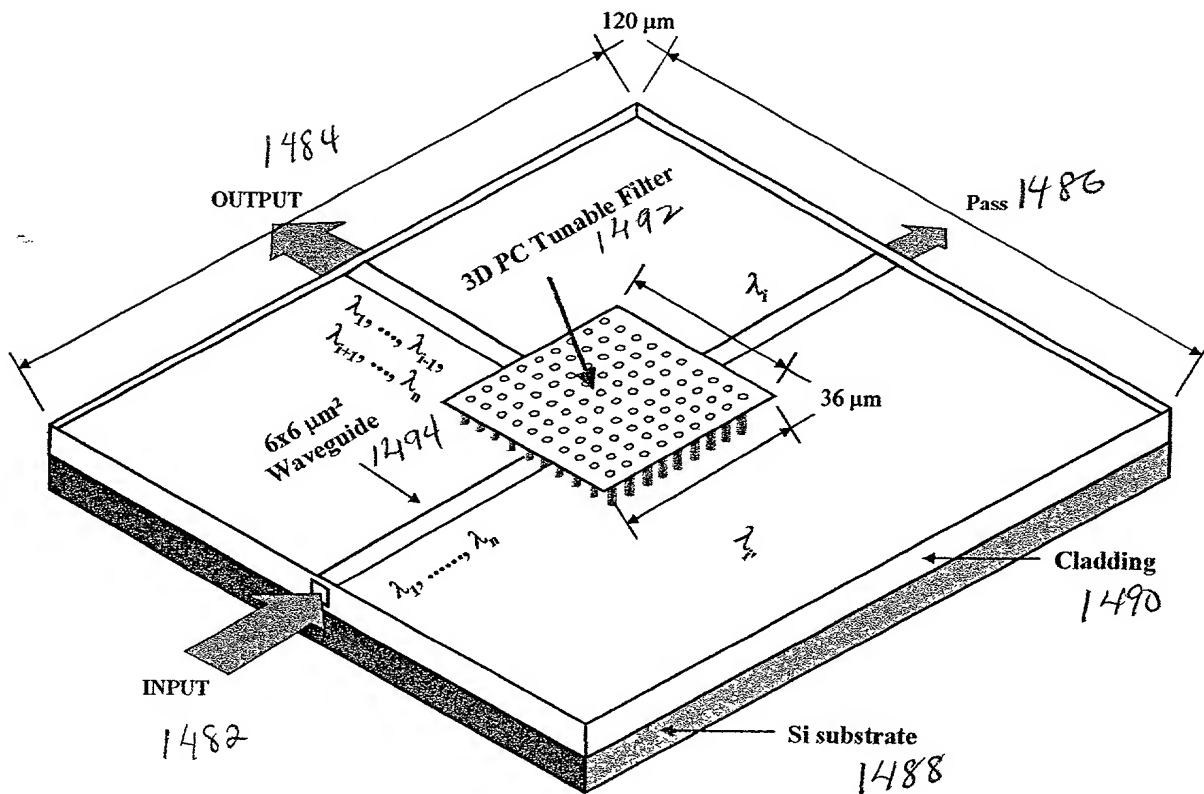
Figure 42D



Tunable Filter using 2D-PC  
 Figure 43A



21480



### 3D PC-Tunable Filter

Figure 44A

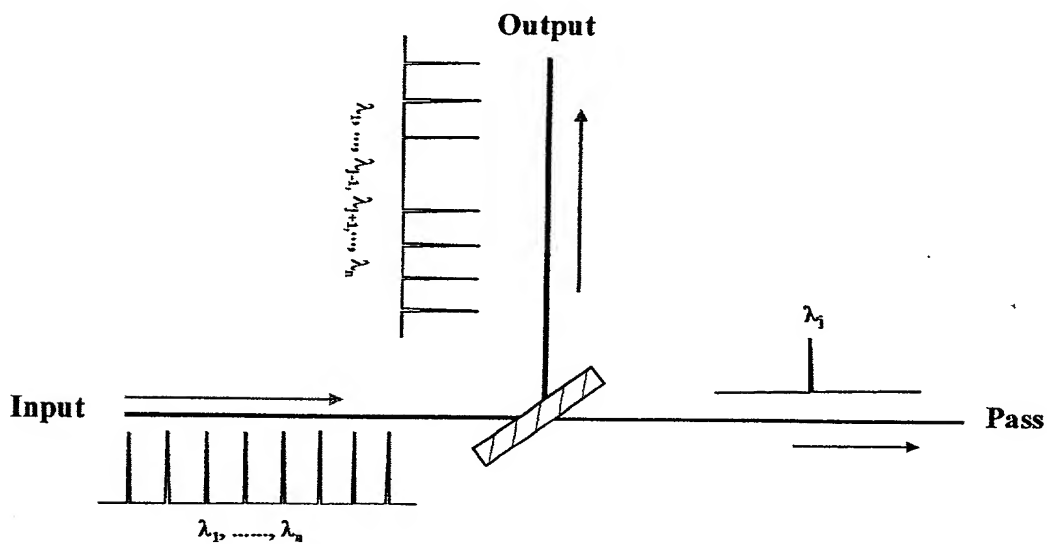


Figure 44B

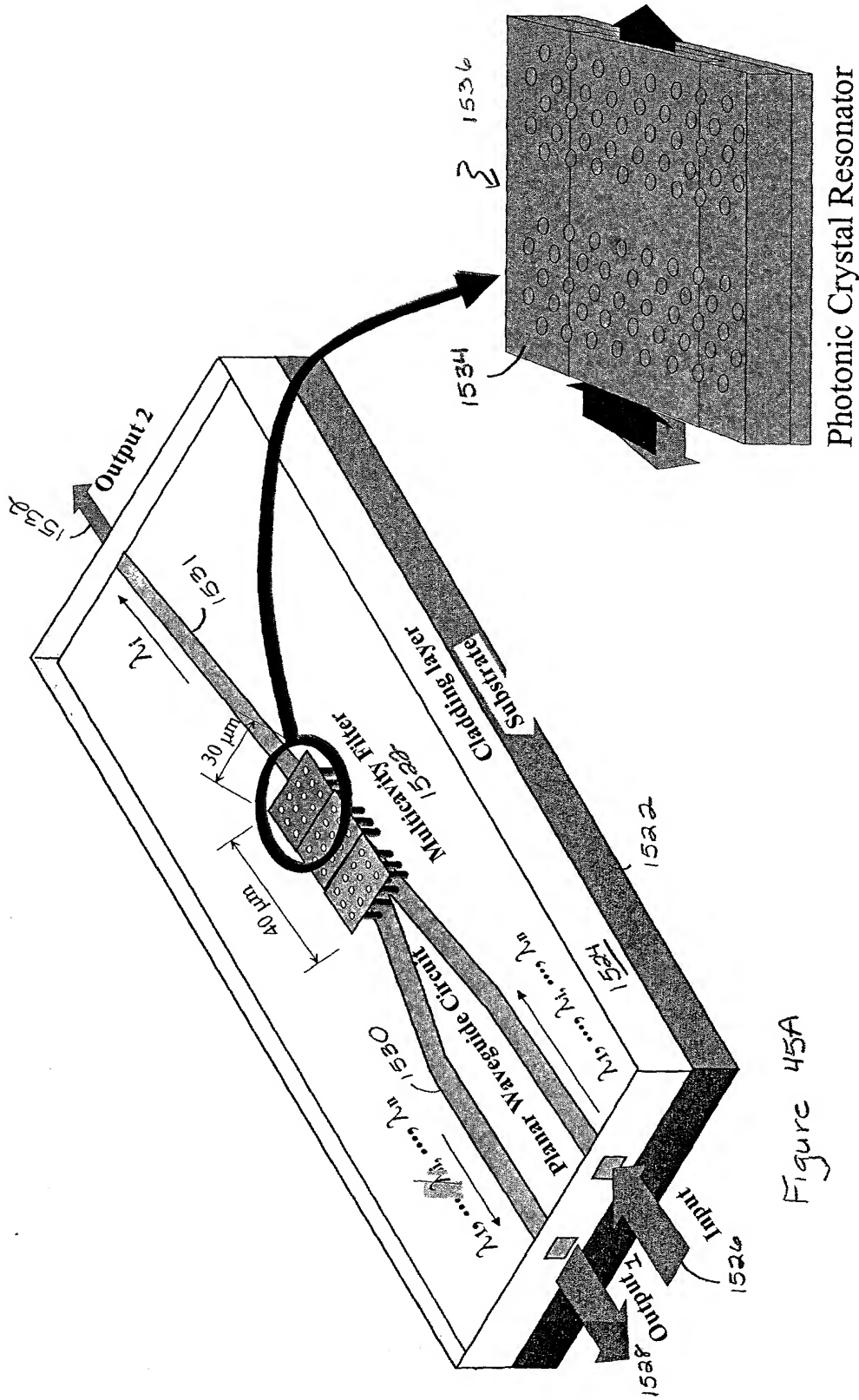


Figure 45A

Figure 45B

Photonic Crystal Resonator

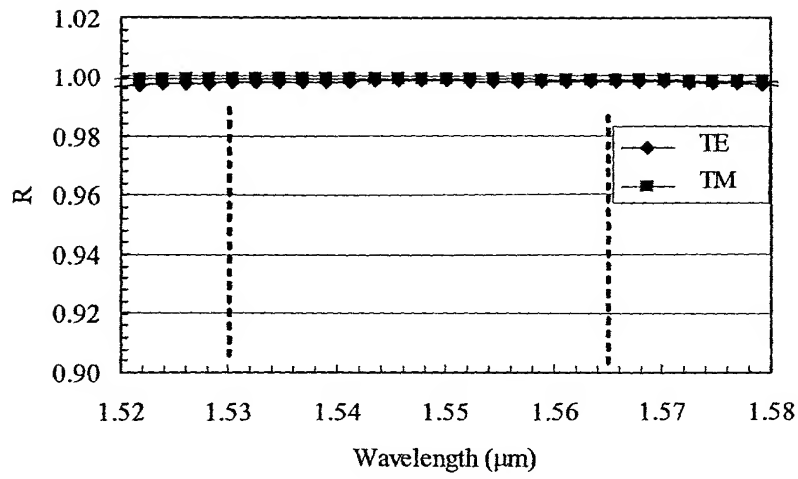


Figure 45C

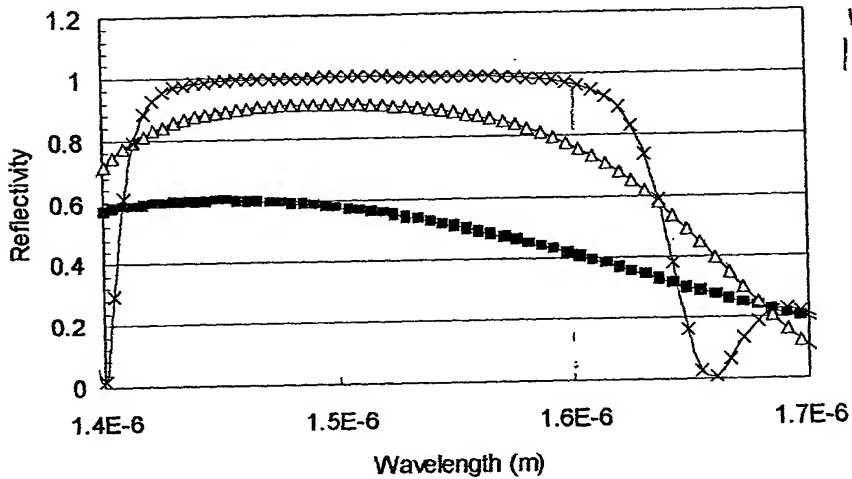


Figure 46A

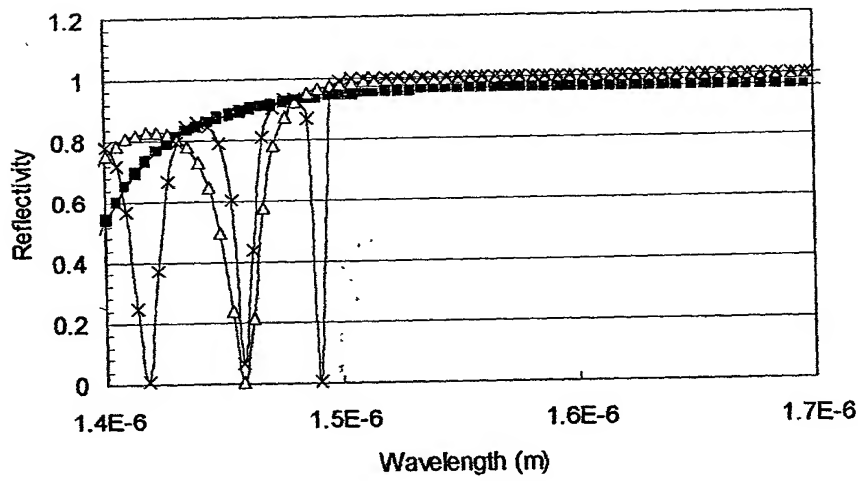


Figure 46B

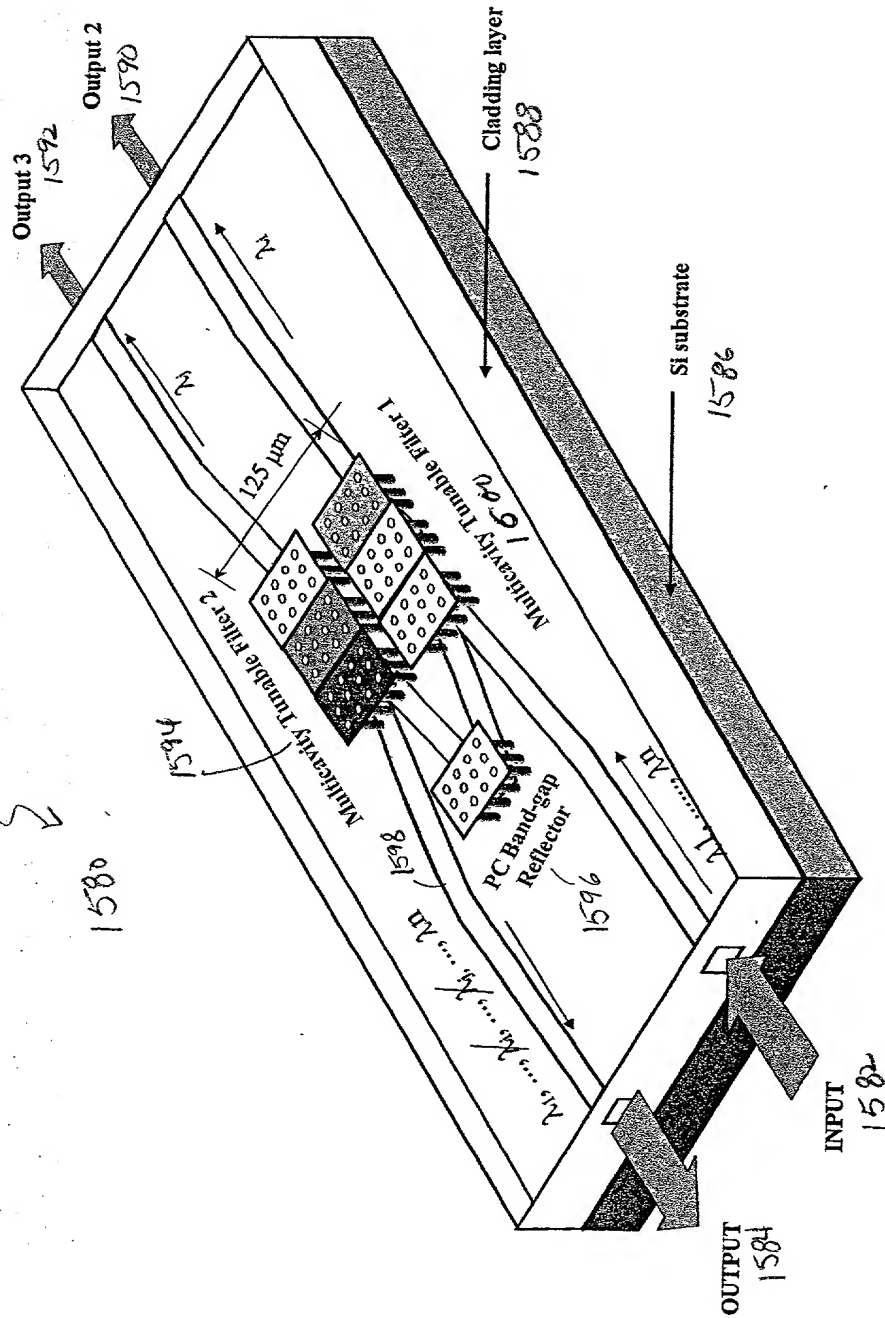
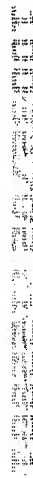
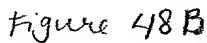


Figure 47



五





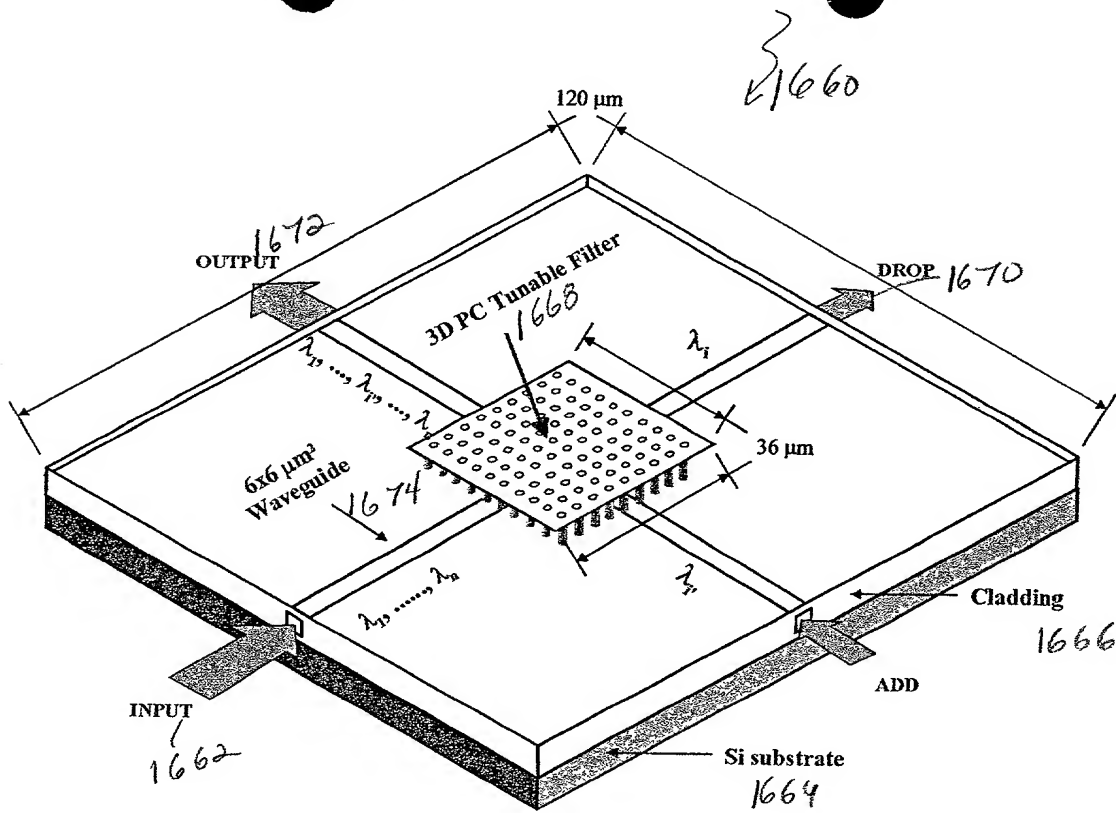


Figure 49A

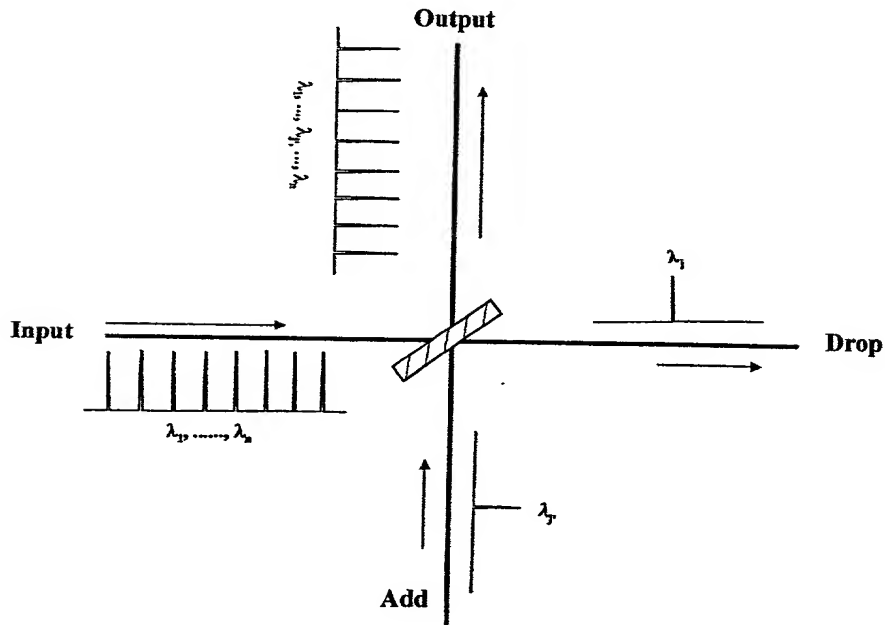


Figure 49B

1680

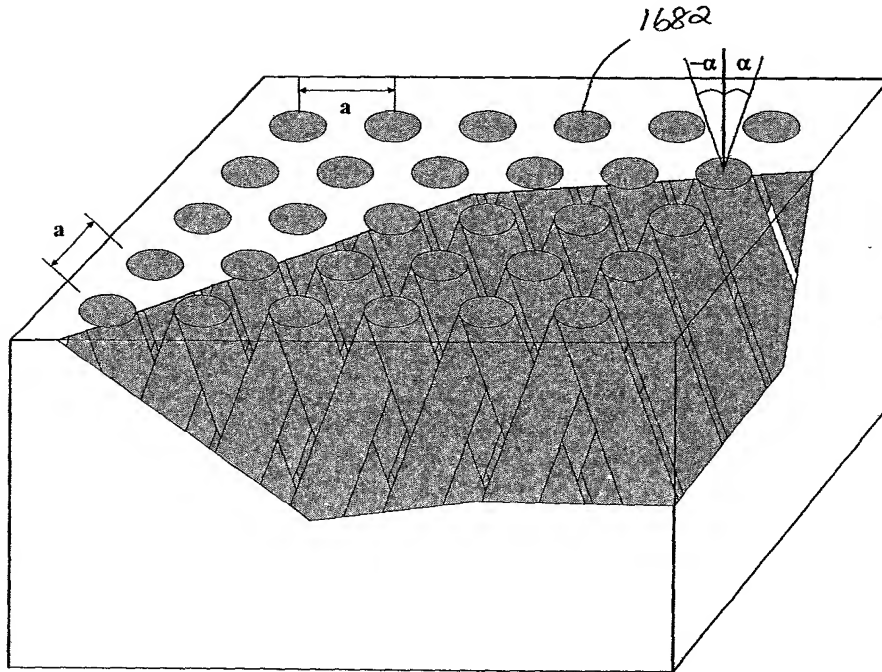


Figure 49C

1690

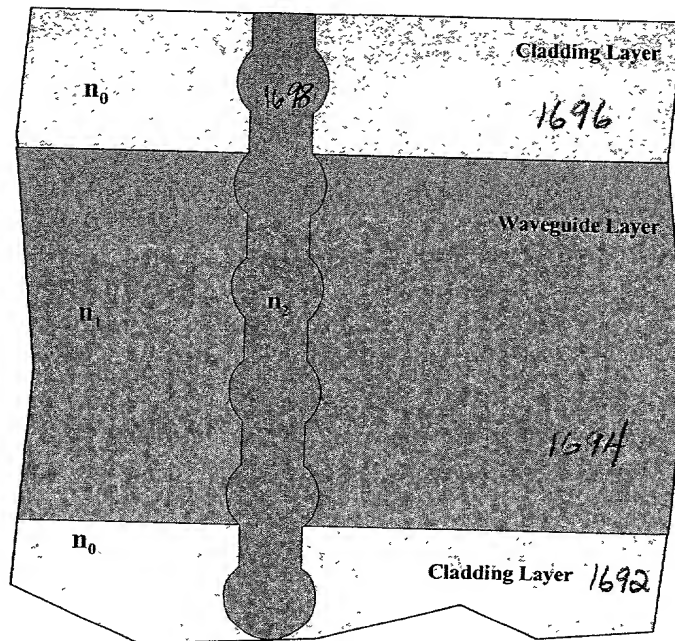


Figure 49D

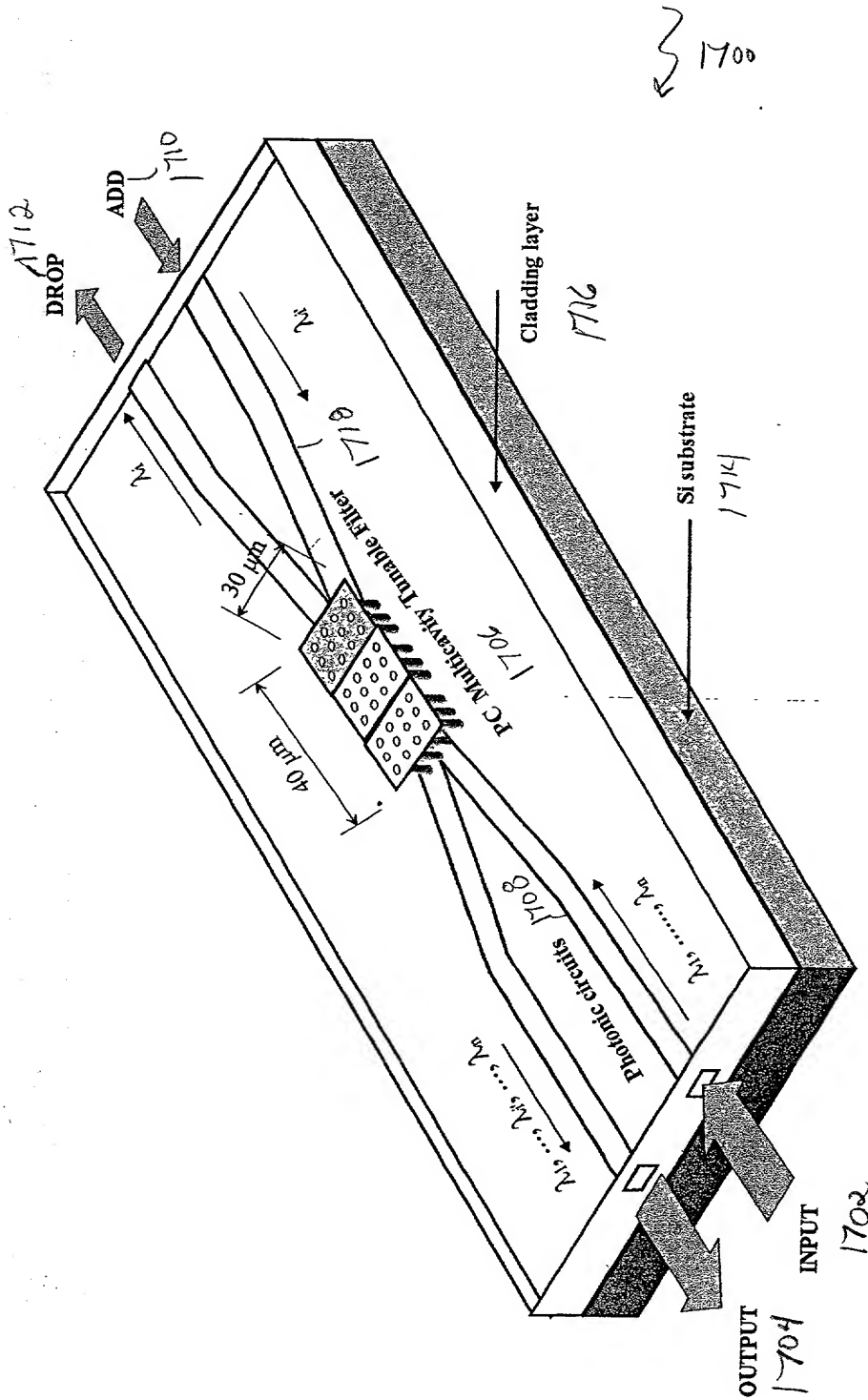
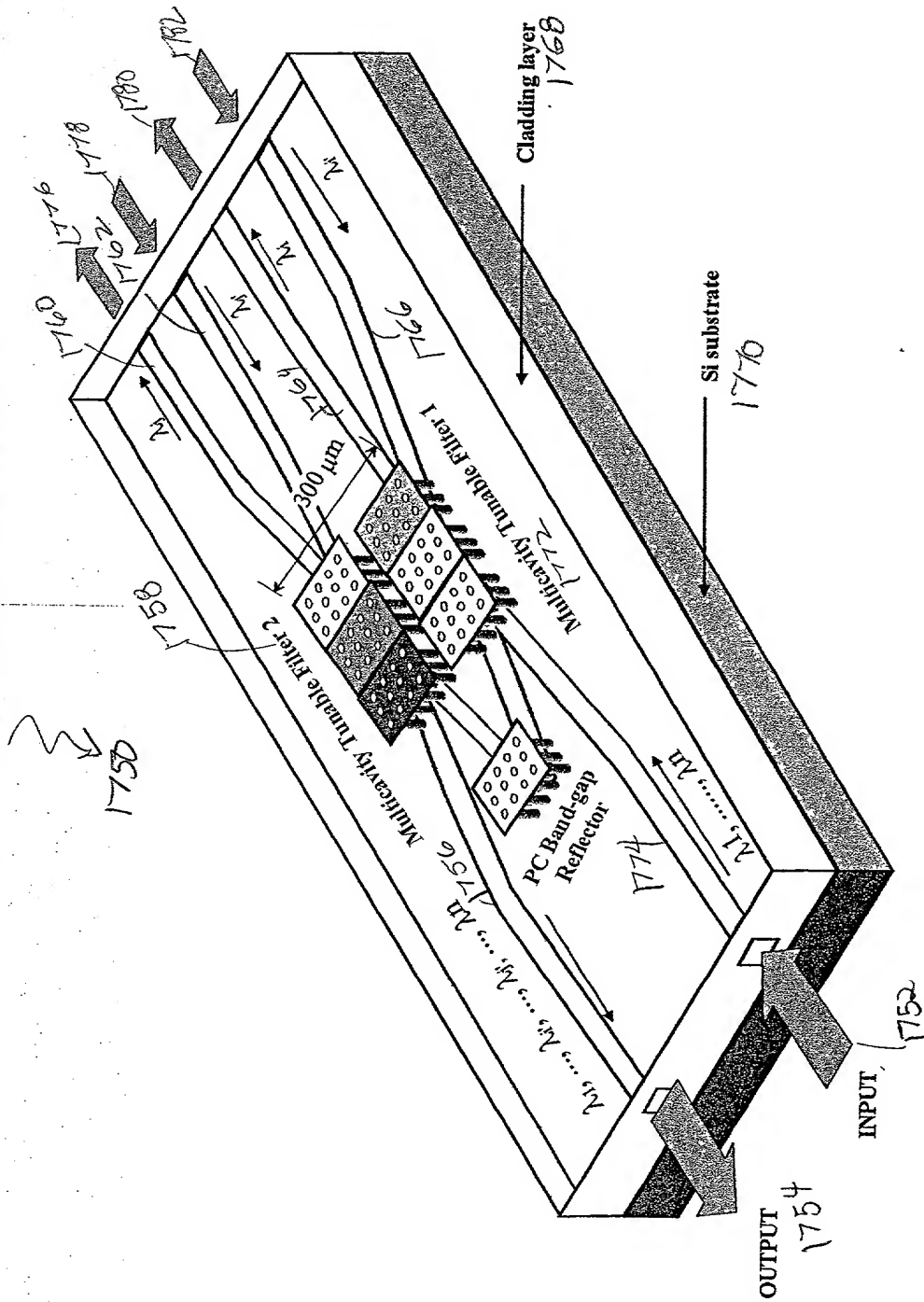


Figure 50



Dual-Wavelength Dynamic OADM

Figure 57

1810  
 3

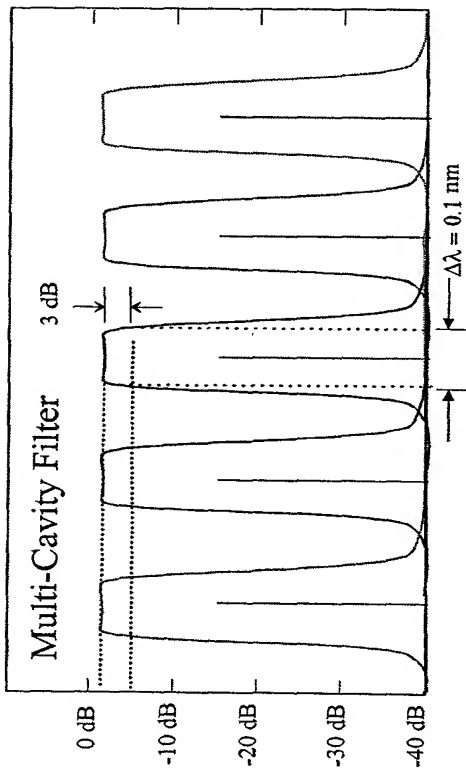


Figure 52A

1810  
 3

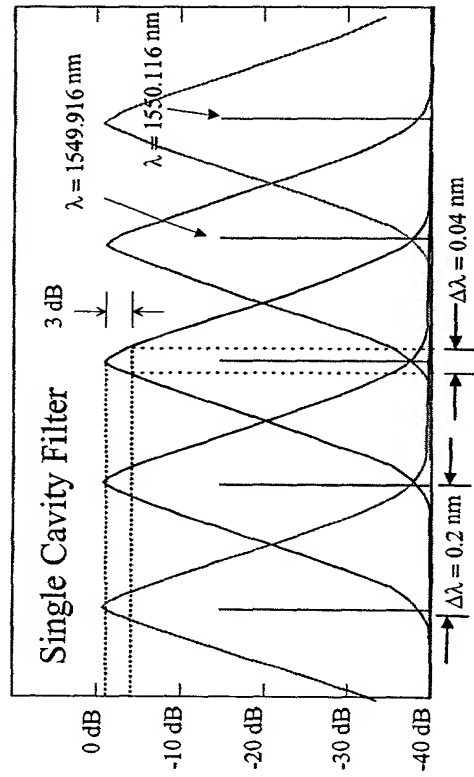


Figure 52B

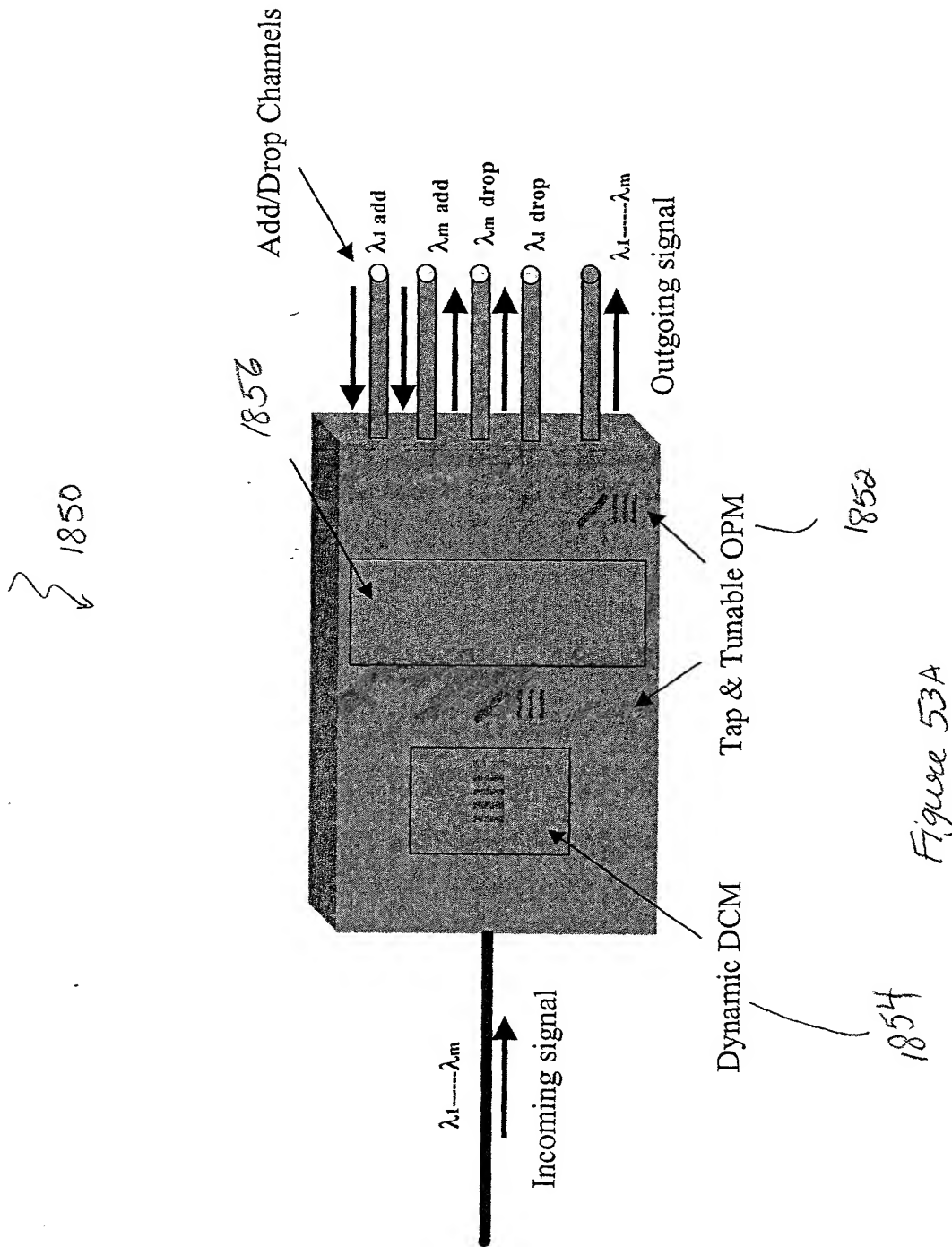


Figure 53A

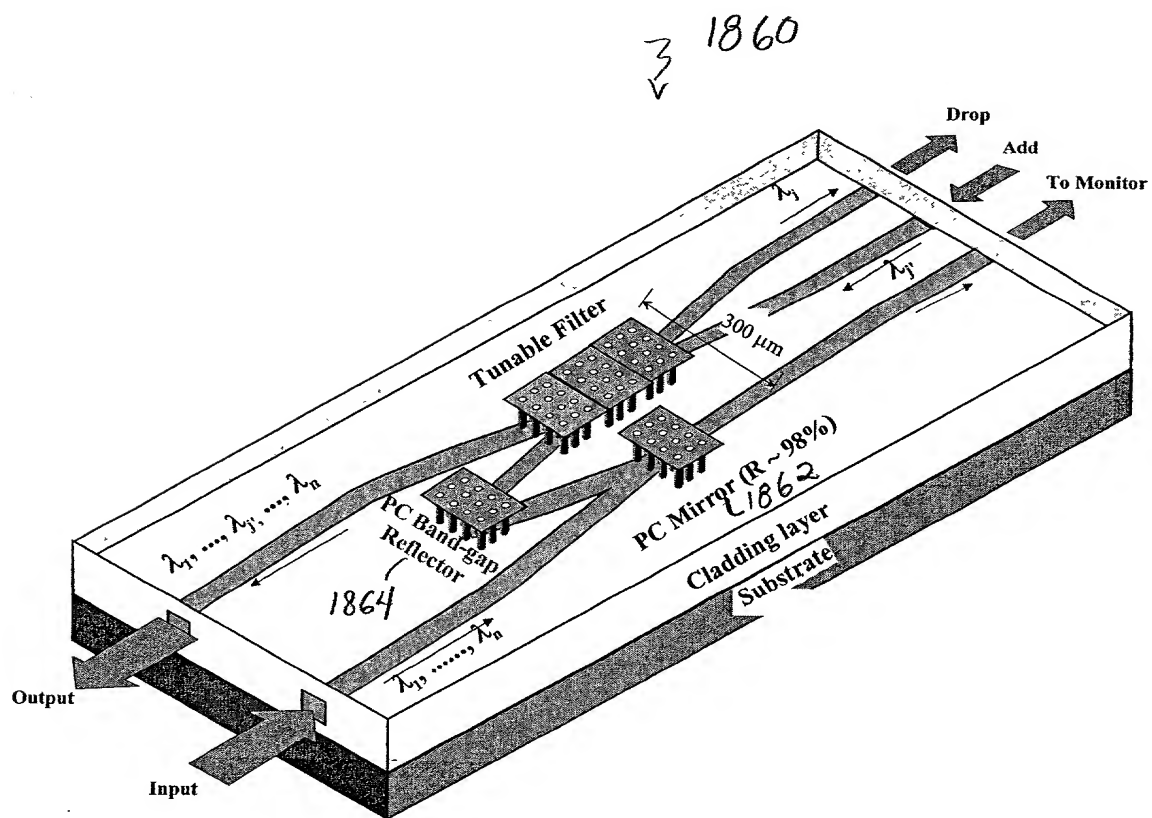


Figure 53B



1880

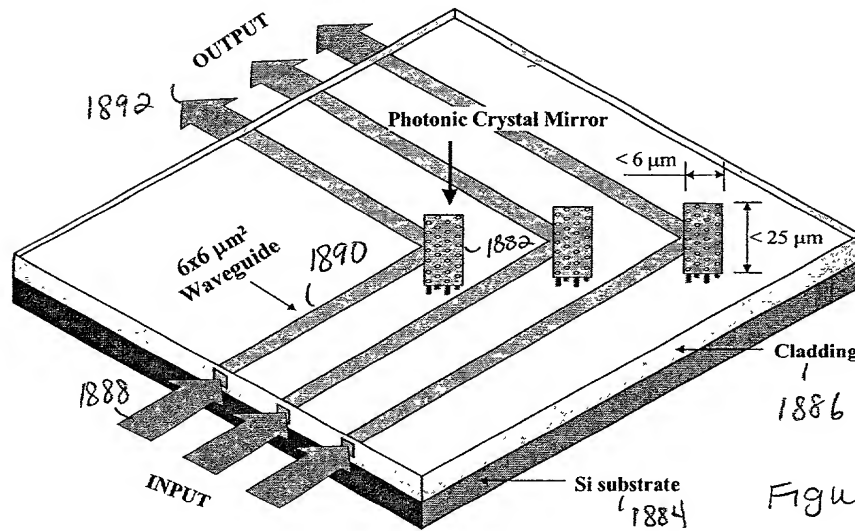
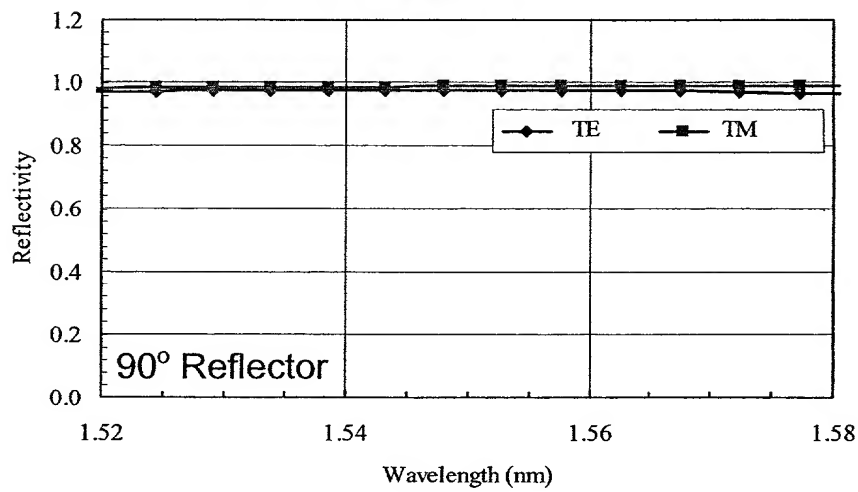


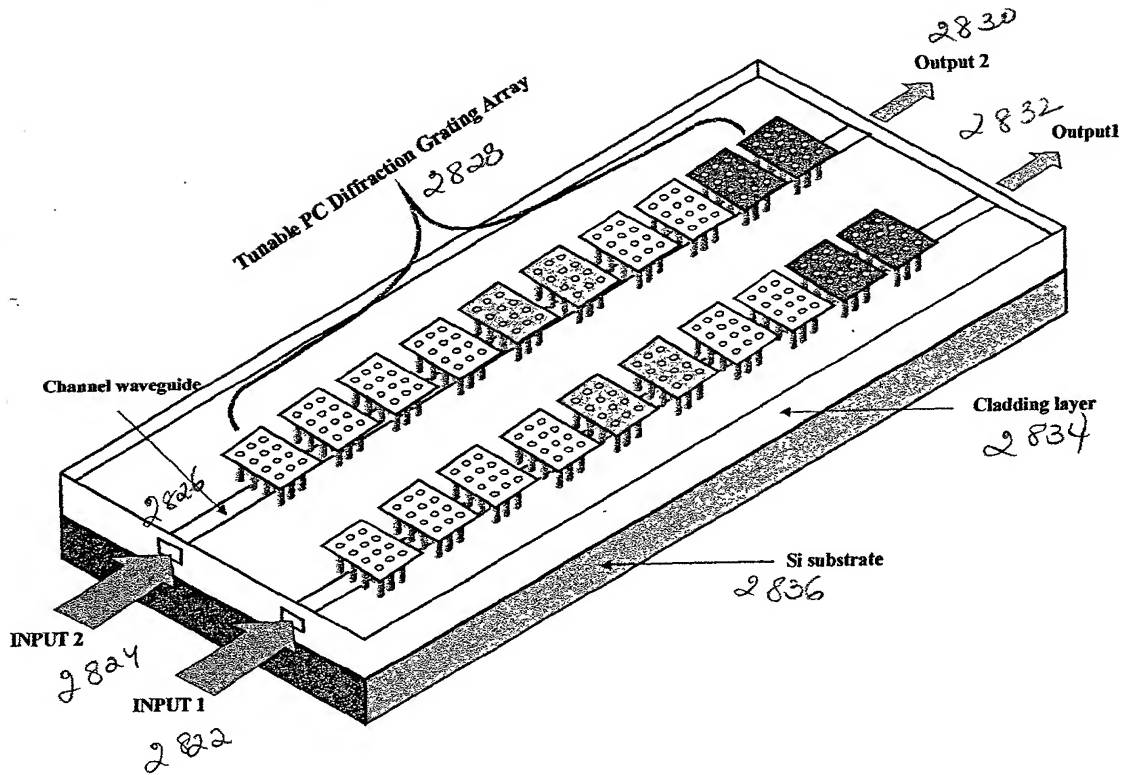
Figure 54A



1896

Figure 54B

32820



### Variable Optic Attenuation/Spectral Equalizer Array

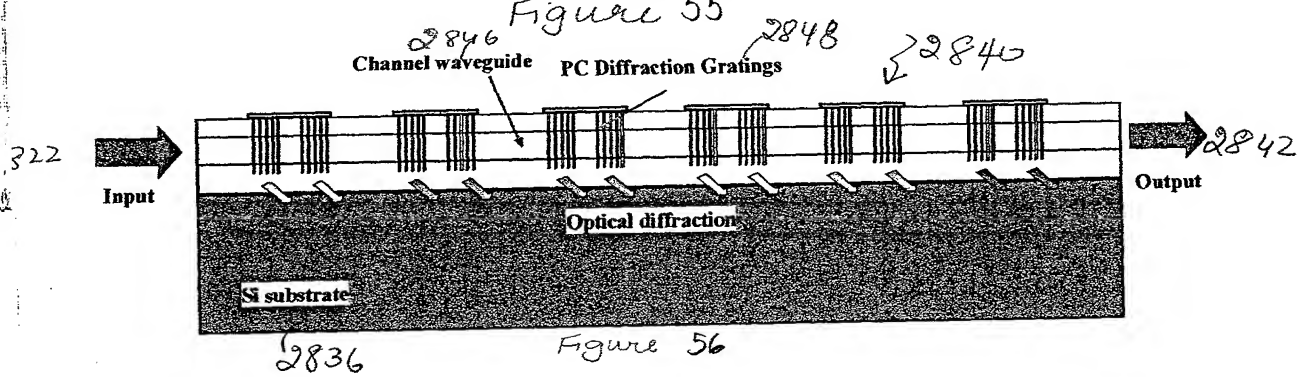


Figure 56

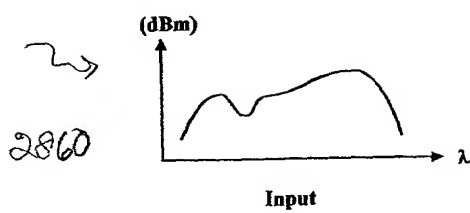


Figure 57A

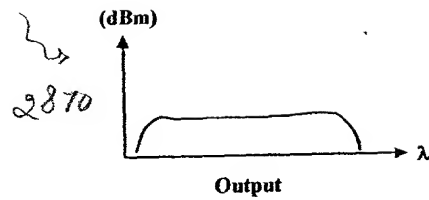


Figure 57B

### Spectral Equalizer Array

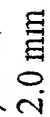


Figure 58

3000

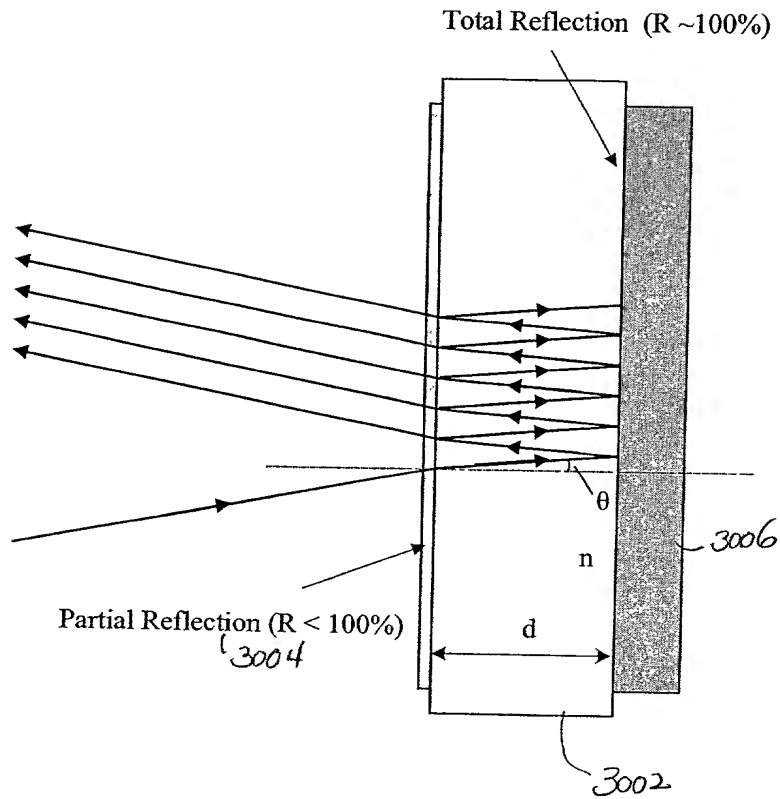


Figure 59

3200  
↙

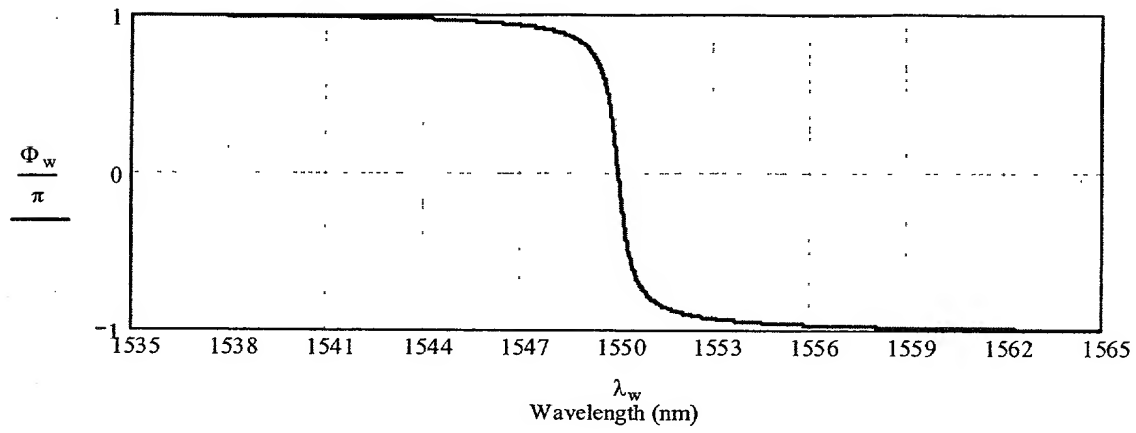


Figure 60

} 3300

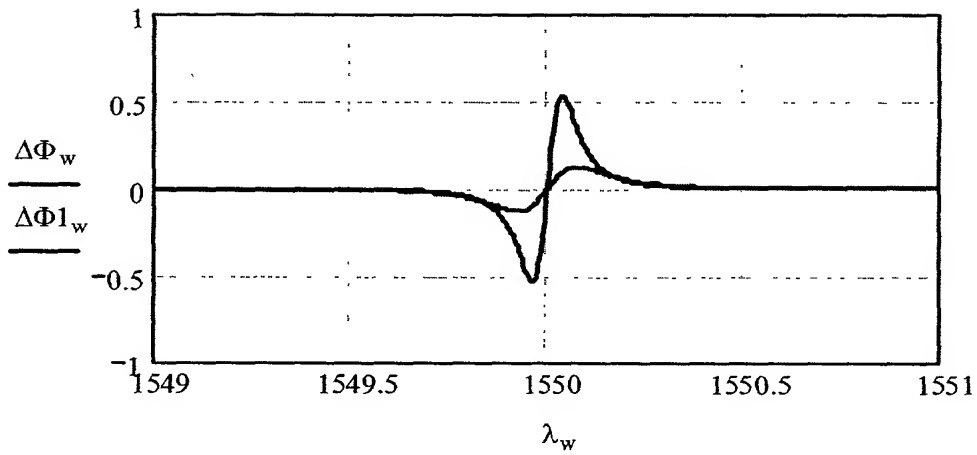


Figure 61

3400

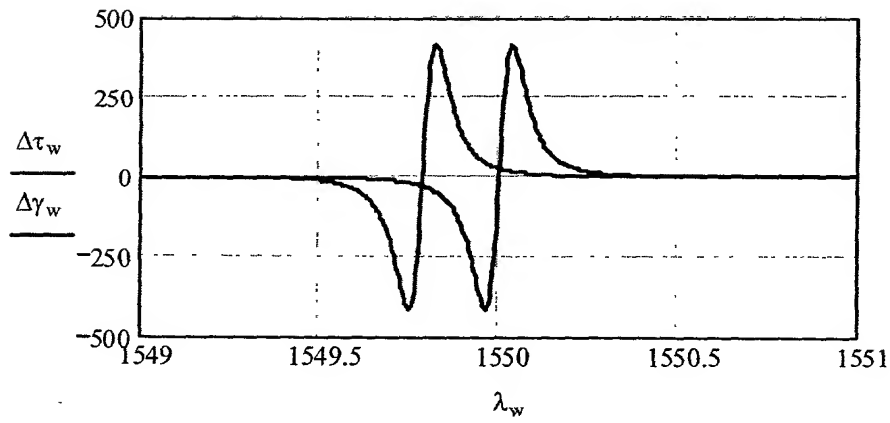


Figure 62